DCR-TRV240/TRV340

RMT-814

SERVICE MANUAL

US Model
Canadian Model
E Model
Hong Kong Model
DCR-TRV240/TRV340
Korea Model
Tourist Model
Argentina Model
Brazilian Model
DCR-TRV340

M2000 MECHANISM

Ver 1.4 2005. 06

Self Diagnosis Supported model

Digital 8

Digital Handycam

InfoLITHIUM M SERIES

MEMORY STICK

Photo : DCR-TRV340

On the VC-276 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-276 board.
Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the VC-276 board are not shown.
The following pages are not shown.

Schematic diagram ..... Pages 4-29 to 4-78
Printed wiring board ..... Pages 4-79 to 4-82
Waveforms and mounted parts location ..... Pages 4-85 to 4-89
Electrical parts list ..... Pages 6-14 to 6-25

For MECHANISM ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅸ M2000 MECHANISM " (9-929-861-11).

SPECIFICATIONS

— Continued on next page —

DIGITAL VIDEO CAMERA RECORDER

SONY

General

Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording using LCD
3.8 W
Viewfinder
3.0 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Recommended charging temperature
10°C to 30°C (50°F to 86°F)
Storage temperature
–20°C to + 60°C (–4°F to + 140°F)
Dimensions (approx.)
206 × 101 × 85 mm
(8 1/8 × 4 × 3 3/8 in.)
(w/h/d)
Mass (approx.)
DCR-TRV240:
890 g (1 lb 15 oz)
DCR-TRV340:
900 g (1 lb 15 oz)
excluding the battery pack, cassette, lens cap and shoulder strap
DCR-TRV240:
1 030 g (2 lb 4 oz)
DCR-TRV340:
1 040 g (2 lb 4 oz)
including the battery pack NP-FM30, 120min. Hi8 cassette, lens cap and shoulder strap
Supplied accessories
See page 3.

AC power adaptor

Power requirements
100 – 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in the operating mode
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to + 60°C (–4°F to + 140°F)
Dimensions (approx.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding power cord

Battery pack

Maximum output voltage
DC 8.4 V
Mean output voltage
DC 7.2 V
Capacity
5.0 Wh (700 mAh)
Operating temperature
0°C to 40°C (32°F to 104°F)
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.)
(w/h/d)
Mass (approx.)
65 g (2.3 oz)
Type
Lithium ion

"Memory Stick"

(DCR-TRV340 only)

Memory
Flash memory
8MB: MSA-8A
Operating voltage
2.7 – 3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 µA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

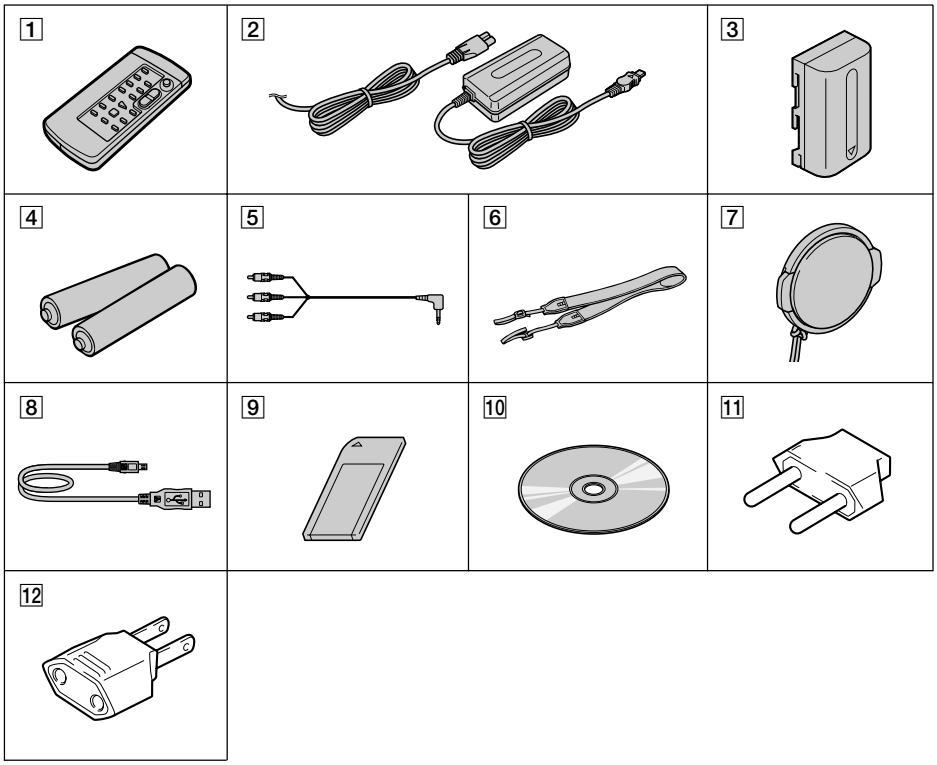
: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

• SUPPLIED ACCESSORIES

Make sure that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1)
2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Power cord** (1)
3 **NP-FM30 battery pack** (1)
4 **Size AA (R6) battery for Remote Commander** (2)
5 **A/V connecting cable** (1)
6 **Shoulder strap** (1)
7 **Lens cap** (1)
8 **USB cable** (1)
9 **"Memory Stick"** (1) (DCR-TRV340 only)
10 **CD-ROM (SPVD-008 USB Driver)** (1)
11 **2-pin conversion adaptor** (1)
DCR-TRV340 : Tourist model
12 **2-pin conversion adaptor** (1)
DCR-TRV240 : E, Hong Kong/
TRV340 : E, Hong Kong model

Table for difference of function

Model	DCR-TRV240	DCR-TRV340	Remark
Destination	US, CND, E, HK	US, CND, E, HK, KR, JE, AR, BR	
Memory Stick	×	○	○ : with VC-276 board IC4901, 4903, 4905, 5001, 5101, 5102
MPEG Movie	×	△	× : with VC-276 board IC4801, 4802
Intelligent Accessory Shoe	8p	15p	15p : Printer ready

• Abbreviation
CND : Canadian model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
AR : Argentina model
BR : Brazilian model

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Parts list of the VC-276 board are not shown.
Pages from 6-14 to 6-25 are not shown.

* Optical axis frame and Color reproduction frame are shown on pages 206 and 207.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

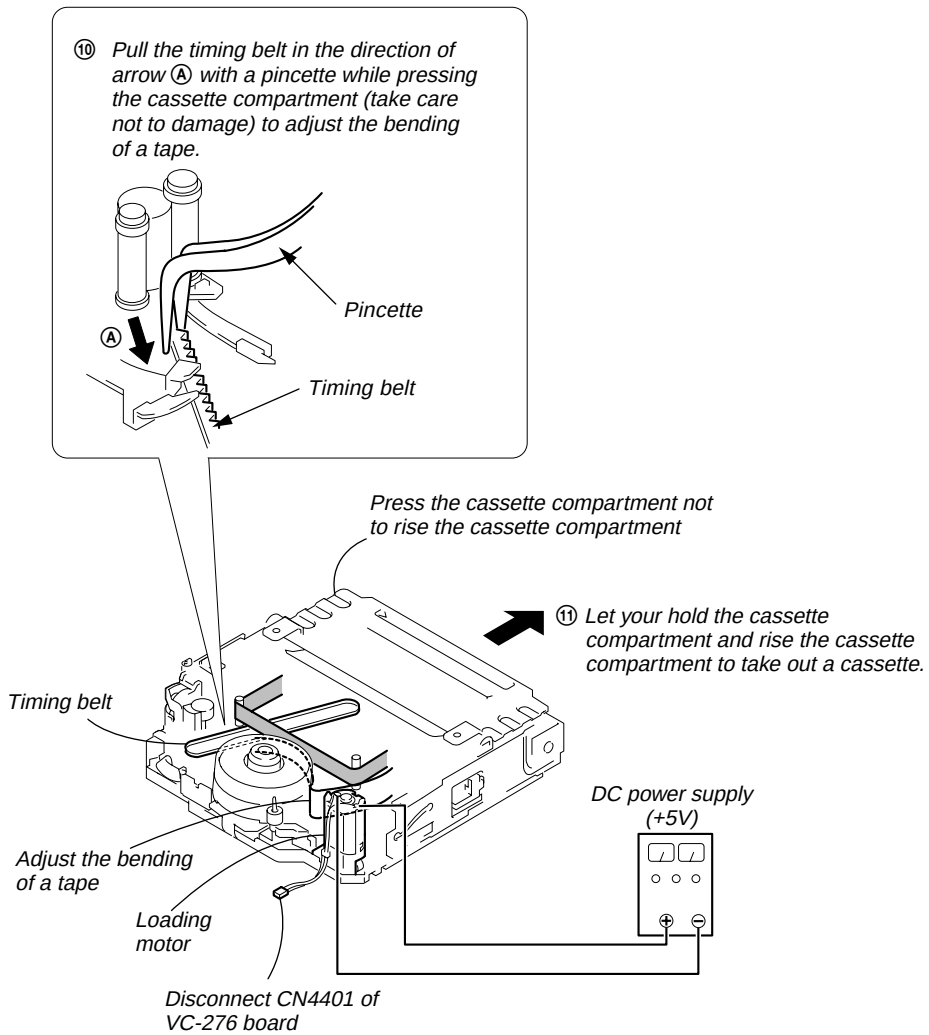
In this unit, about 10 seconds after power is supplied (8.4V) to the battery terminal using the service power code (J-6082-223-A), the power is shut off so that the unit cannot operate.
These following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Use the DC IN terminal. (Use the AC power adaptor.)

Method 2.
Connect the adjustment remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the HOLD switch to the "ADJ" side.

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-2. to remove the front panel section.
② Refer to 2-3. to remove the cabinet (upper) section.
③ Refer to 2-3. to remove the cabinet (R) section.
④ Refer to 2-4. to remove the lens section.
⑤ Refer to 2-5. to remove the EVF section.
⑥ Refer to 2-6. to remove the battery panel section.
⑦ Refer to 2-8. and 2-9. to remove the cabinet (L) section. (Include the CS frame assembly and control switch block (SS-1380).)
⑧ Disconnect CN4401 (2P) of VC-276 board.
⑨ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compertment.


⑩ Pull the timing belt in the direction of arrow Ⓐ with a pincette while pressing the cassette compartment (take care not to damage) to adjust the bending of a tape.
Pincette
Ⓐ
Timing belt
Press the cassette compartment not to rise the cassette compartment
⑪ Let your hold the cassette compartment and rise the cassette compartment to take out a cassette.
Timing belt
DC power supply (+5V)
Adjust the bending of a tape
Loading motor
Disconnect CN4401 of VC-276 board

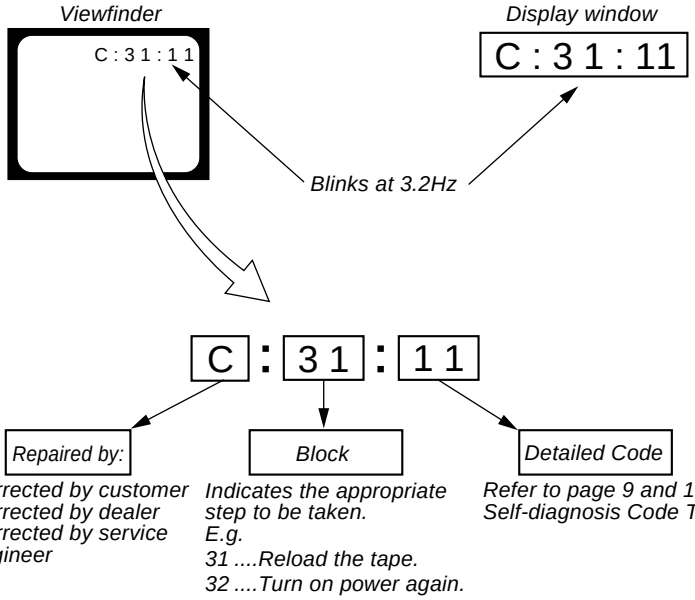
SELF-DIAGNOSIS FUNCTION

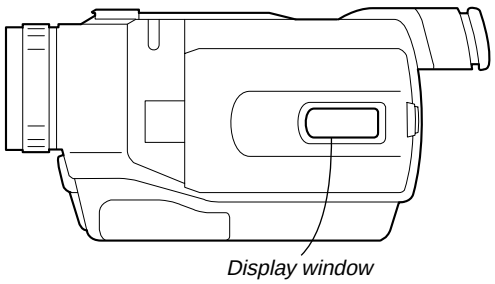
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.


Viewfinder
C : 3 1 : 1 1
Display window
C : 3 1 : 11
Blinks at 3.2Hz
C : 31 : 11
Repaired by:
Block
Detailed Code
C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer
Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.
Refer to page 9 and 10. Self-diagnosis Code Table.

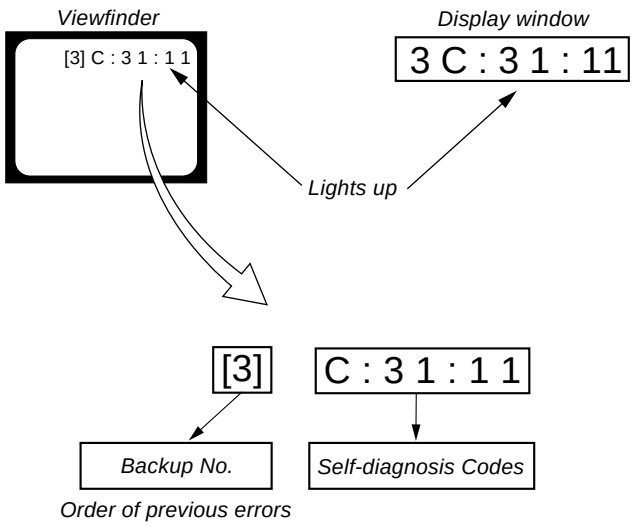


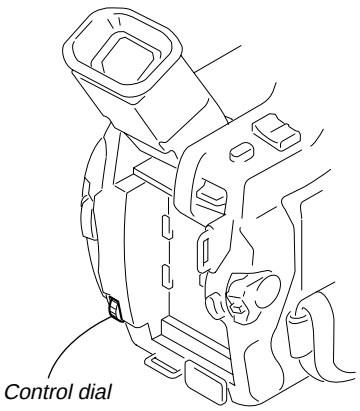
3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the "STOP" key, set the switch from OFF to "VTR or PLAYER", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.





3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time [4] : Occurred fourth time
[2] : Occurred second time [5] : Occurred fifth time
[3] : Occurred third time [6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The "self-diagnosis display" data will be backed up by the coin-type lithium battery (CF-2500 block BT001). When the CF-2500 block is disconnected, the "self-diagnosis display" data will be lost by initialization.

4. Self-diagnosis Code Table

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	3	1	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	1	PG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	1	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	1	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑬ of CN1551 of VC-276 board) when focusing is performed when the focus ring is rotated in the focus manual mode and the focus motor drive circuit (IC1553 of VC-276 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑫ of CN1551 of VC-276 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC1553 of VC-276 board) when zooming is not performed.
E	6	2	0	0	Handshake correction function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE301 of SE-032 board) peripheral circuits.
E	6	2	0	1	Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE302 of SE-032 board) peripheral circuits.

SECTION 1
GENERAL

This section is extracted from instruction manual.

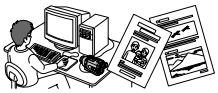
Main features

Recording moving or still images, and playing them back

- Recording moving pictures on a tape (p. 20)
- Recording still images on a tape (p. 38)
- Playing back a tape (p. 33)
- Recording still images on "Memory Stick"s (DCR-TRV340 only) (p. 122)
- Recording moving pictures on "Memory Stick"s (DCR-TRV340 only) (p. 138)
- Viewing still images recorded on "Memory Stick"s (DCR-TRV340 only) (p. 148)
- Viewing moving pictures on "Memory Stick"s (DCR-TRV340 only) (p. 151)

Capturing images on your computer

- Viewing images recorded on "Memory Stick"s using the USB cable (DCR-TRV340 only) (p. 153)
- Viewing images recorded on a tape using the USB cable (p. 93)
- Viewing images live on your computer from your camcorder using the USB cable (p. 102)
- Capturing images from an analog video unit on your computer (p. 87)



Other uses

Functions for adjusting exposure in the recording mode

- BACKLIGHT (p. 27)
- NightShot / Super NightShot / Color Slow Shutter (p. 28)
- PROGRAM AE (p. 50)
- Adjusting the exposure manually (p. 52)

Functions for giving images more impact

- Digital zoom [MENU] (p. 23) The default setting is **OFF**. (To zoom greater than 25×, select the digital zoom power in **D ZOOM** in the menu settings.)
- Fader (p. 43)
- Picture effects (p. 46)
- Digital effects (p. 47)
- Titles (p. 57, 59)
- MEMORY MIX (DCR-TRV340 only) (p. 127)

Functions for giving a natural appearance to your recordings

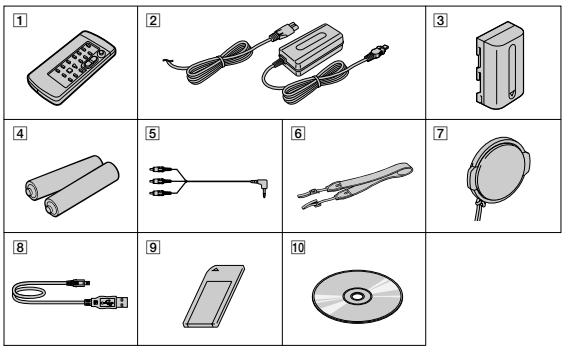
- Sports lesson (p. 50)
- Landscape (p. 50)
- Manual focus (p. 53)

Functions for use on recorded tapes

- END SEARCH / EDITSEARCH / Rec Review (p. 31)
- DATA CODE (p. 34)
- Tape PB ZOOM (p. 64)
- ZERO SET MEMORY (p. 66)
- Digital program editing (on tapes) (p. 73) / (on "Memory Stick"s) (DCR-TRV340 only) (p. 144)

Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1) (p. 205)
2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Power cord** (1) (p. 13)
3 **NP-FM30 battery pack** (1) (p. 12, 13)
4 **Size AA (R6) battery for Remote Commander** (2) (p. 205)
5 **A/V connecting cable** (1) (p. 37)
6 **Shoulder strap** (1) (p. 199)
7 **Lens cap** (1) (p. 20)
8 **USB cable** (1) (p. 95, 154)
9 **"Memory Stick"** (1) (DCR-TRV340 only) (p. 115)
10 **CD-ROM (SPVD-008 USB Driver)** (1) (p. 95, 154)

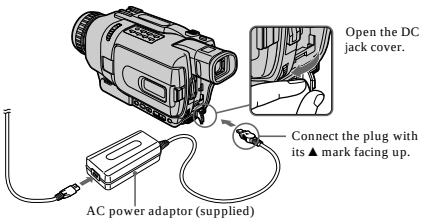
Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, storage media, etc.

Quick Start Guide

This chapter introduces you to the basic features of your camcorder. See the page in parentheses "( )" for more information.

1 Connecting the power cord (p. 16)

Use the battery pack when using your camcorder outdoors (p. 12).

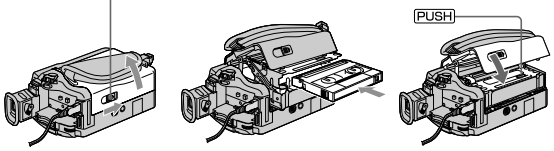


2 Inserting a cassette (p. 19)

1 Slide OPEN / EJECT in the direction of the arrow and open the lid.

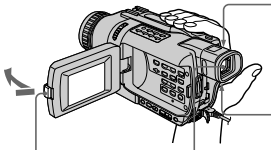
2 Insert the cassette in straight as far as possible into the cassette compartment with the window facing up.
Push the center of the cassette back to insert the cassette.

3 Close the cassette compartment by pressing PUSH on the cassette compartment.
After the cassette compartment goes down completely, close the lid until it clicks.

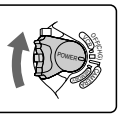


3 Recording a picture (p. 20)

1 Remove the lens cap.



2 Set the POWER switch to CAMERA while pressing the small green button.



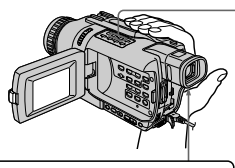
3 Open the LCD panel while pressing OPEN. The picture appears on the LCD screen.

4 Press START / STOP. Your camcorder starts recording. To stop recording, press START / STOP button again.

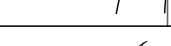
Viewfinder
When the LCD panel is closed, use the viewfinder with your eye against the eyecup.
The picture in the viewfinder is black and white.

When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock setting before recording (p. 17).

4 Monitoring the playback picture on the LCD screen (p. 33)



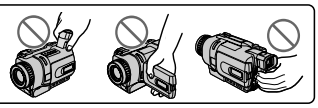
2 Press ◄◄ to rewind the tape.



3 Press ► to start playback.

1 Set the POWER switch to VCR while pressing the small green button.

Note
Do not pick up your camcorder by holding the viewfinder, the LCD panel, or the battery pack.



— Getting Started —

Using this manual

The instructions in this manual are for the two models listed in the table below. Before you start reading this manual and operating your camcorder, check the model number by looking at the bottom of your camcorder. The DCR-TRV340 is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "DCR-TRV340 only."
As you read through this manual, buttons and settings on your camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

When you carry out an operation, you can hear a beep to indicate that the operation is being carried out.

Differences by camcorder model

DCR-	TRV240	TRV340
MEMORY mark* (on the POWER switch)	—	●
Self-timer	—	●

● Provided
— Not provided

* The models with MEMORY marked on the POWER switch is provided with memory functions. See page 115 for details.

Before using your camcorder

With your digital camcorder, you can use Hi8 Hi8 / Digital8 video cassettes. Your camcorder records and plays back pictures in the Digital8 system. Also, your camcorder plays back tapes recorded in the Hi8 Hi8 / standard 8 8 (analog) system. You, however, cannot use the functions in "Advanced Playback Operations" on page 62 to 69 for playback in the Hi8 Hi8 / standard 8 8 system. To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8 Hi8 / standard 8 8 with the Digital8 system on a tape.

Note on TV color systems

TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system-based TV.

Copyright precautions

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

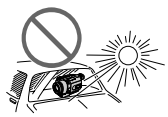
Precautions on camcorder care

Lens and LCD screen/finder

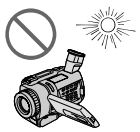
- **The LCD screen and the finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.**
- Do not let your camcorder become wet. Keep your camcorder away from rain and sea water. Letting your camcorder become wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions **[c]**.
- Do not directly shoot the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun in low light conditions such as dusk **[d]**.

[a]

[b]



[c]

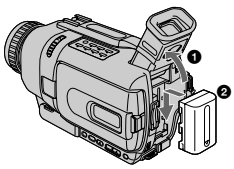


[d]

Step 1 Preparing the power supply

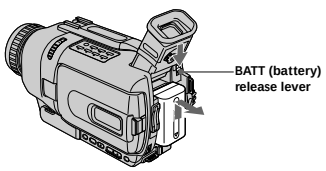
Installing the battery pack

(1) Lift up the viewfinder.
(2) Slide the battery pack down until it clicks.



To remove the battery pack

(1) Lift up the viewfinder.
(2) Slide the battery pack out in the direction of the arrow while pressing BATT (battery) release lever down.



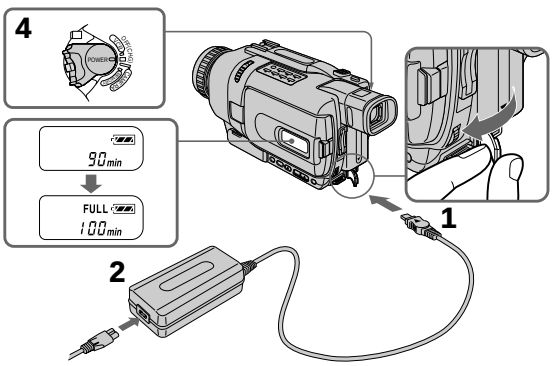
If you install the large-capacity battery pack
If you install the NP-FM70 / QM71 / FM90 / QM91 / FM91 battery pack on your camcorder, extend its viewfinder.

Charging the battery pack

Use the battery pack after charging it for your camcorder.
Your camcorder operates only with the "InfoLITHIUM" battery pack (M series).
See page 187 for details of "InfoLITHIUM" battery pack.

(1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
(2) Connect the power cord to the AC power adaptor.
(3) Connect the power cord to a wall outlet.
(4) Set the POWER switch to OFF (CHG). Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to , **normal charge** is completed. To fully charge the battery **(full charge)**, leave the battery pack attached after normal charge is completed until FULL appears on the display window. Fully charging the battery allows you to use the battery longer than usual.



The number in the illustration of the display window may differ from that on your camcorder.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Note
Prevent metallic objects from coming into contact with the metal parts on the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

When the battery pack is charged fully
The LCD backlight of the display window is turned off.

Remaining battery time indicator
The remaining battery time indicator in the display window roughly indicates the recording time when recording using the viewfinder.

Until your camcorder calculates the actual remaining battery time
"– – – – min" appears in the display window.

While charging the battery pack
No indicator appears or the indicator flashes in the display window in the following cases:
– The battery pack is not installed correctly.
– Something is wrong with the battery pack.

If the power may go off although the remaining battery time indicator indicates that the battery pack has enough power to operate
Charge the battery pack fully again so that the indication on the remaining battery time indicator is correct.

When you use the AC power adaptor
Place the AC power adaptor near a wall outlet. If any trouble occurs with this unit, disconnect the plug from the wall outlet as soon as possible to cut off the power.

Recommended charging temperature
We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F).

What is "InfoLITHIUM"?
The "InfoLITHIUM" is a lithium ion battery pack that can exchange data such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" M series battery packs have the InfoLITHIUM M mark.
"InfoLITHIUM" is a trademark of Sony Corporation.

Charging time

Battery pack	Full charge (Normal charge)
NP-FM30 (supplied)	145 (85)
NP-FM50	150 (90)
NP-FM70	240 (180)
NP-QM71	260 (200)
NP-FM90	330 (270)
NP-QM91 / FM91	360 (300)

The charging time may increase if the battery's temperature is extremely high or low because of the ambient temperature.
Approximate number of minutes to charge an empty battery pack at 25°C (77°F)

Recording time

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous*	Typical**	Continuous*	Typical**
NP-FM30 (supplied)	100	55	80	45
NP-FM50	165	95	130	75
NP-FM70	345	200	270	155
NP-QM71	400	230	315	180
NP-FM90	520	300	410	235
NP-QM91 / FM91	605	350	475	275

Approximate number of minutes when you use a fully charged battery

* Approximate continuous recording time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.
** Approximate number of minutes when recording while you repeat recording start / stop, zooming and turning the power on / off. The actual battery life may be shorter.

Playing time

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM30 (supplied)	80	110
NP-FM50	130	180
NP-FM70	270	370
NP-QM71	315	430
NP-FM90	410	560
NP-QM91 / FM91	475	645

Approximate number of minutes when you use a fully charged battery

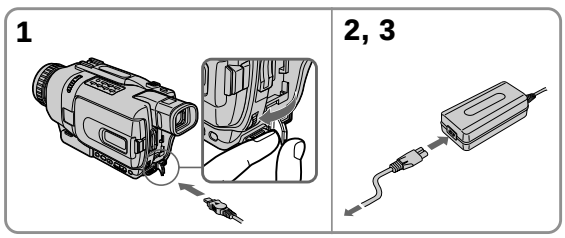
Approximate continuous playing time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

Note
The table shows the playing time for tapes recorded in the Digital8 system. The playing time of tapes recorded in the Hi8 / standard 8 system is reduced by about 20%.

Connecting to a wall outlet

When you use your camcorder for a long time, we recommend that you power it from a wall outlet using the AC power adaptor.

(1) Open the DC IN jack cover, and connect the AC power adaptor to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
(2) Connect the power cord to the AC power adaptor.
(3) Connect the power cord to a wall outlet.



PRECAUTION
The set is not disconnected from the AC power source (house current) as long as it is connected to the wall outlet, even if the set itself has been turned off.

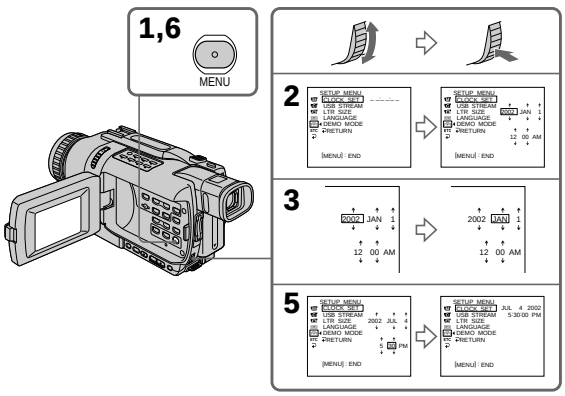
Notes
• The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
• The DC IN jack has "source priority". This means that the battery pack cannot supply any power if the power cord is connected to the DC IN jack, even when the power cord is not plugged into a wall outlet.

Using a car battery
Use Sony DC Adaptor / Charger (optional).

Step 2 Setting the date and time

Set the date and time settings when you use your camcorder for the first time.
"CLOCK SET" will be displayed each time that you set the POWER switch to CAMERA / MEMORY (DCR-TRV340 only) unless you set the date and time settings.
If you do not use your camcorder for about half a year, the date and time settings may be cleared from memory (bars may appear) because the built-in rechargeable battery installed in your camcorder will have been discharged (p. 194).
Set the year, then the month, the day, the hour and then the minute.

(1) Set the POWER switch to CAMERA or MEMORY (DCR-TRV340 only), and then press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select CLOCK SET in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to adjust the desired year, then press the dial.
(4) Set the month, day and hour by turning the SEL / PUSH EXEC dial and pressing the dial.
(5) Set the minute by turning the SEL / PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
(6) Press MENU to make the menu settings disappear.



Step 2 Setting the date and time

The year changes as follows:

1995 ← ···· → 2002 ← ···· → 2079

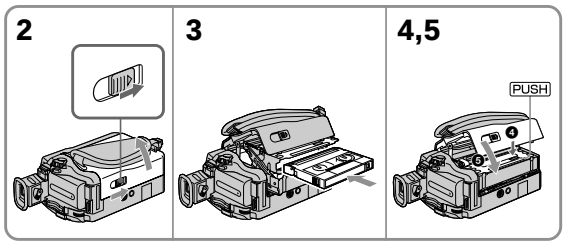
If you do not set the date and time
"-- -- ----" "--:--:--" is recorded on the tape and the "Memory Stick". (DCR-TRV340 only)

Note on the time indicator
The internal clock of your camcorder operates on a 12-hour cycle.
• 12:00 AM stands for midnight.
• 12:00 PM stands for noon.

Step 3 Inserting a cassette

We recommend using Hi8 Hi8 / Digital8 video cassettes.

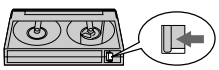
(1) Prepare the power source (p. 12).
(2) Slide OPEN / EJECT in the direction of the arrow and open the lid.
The cassette compartment automatically lifts up and opens.
(3) Insert the cassette straight as far as possible into the cassette compartment with the window facing up.
Push the center of the cassette back to insert.
(4) Close the cassette compartment by pressing PUSH on the cassette compartment.
The cassette compartment automatically goes down.
(5) After the cassette compartment going down completely, close the lid until it clicks.



To eject a cassette
Follow the procedure above, and take out the cassette in step 3.

Notes
• Do not press the cassette compartment down. Doing so may cause a malfunction.
• Your camcorder records pictures in the Digital8 system.
• The recording time when you use your camcorder is half of indicated time on Hi8 Hi8 tape. If you select the LP mode in the menu settings, 3/4 of indicated time on Hi8 Hi8 tape.
• If you use standard 8 8 tape, be sure to play back the tape on your camcorder. Mosaic pattern noise may appear when you play back standard 8 8 tape on other camcorders (including other DCR-TRV240 / TRV340).
• The cassette compartment may not be closed when you press any part of the lid other than the PUSH mark.

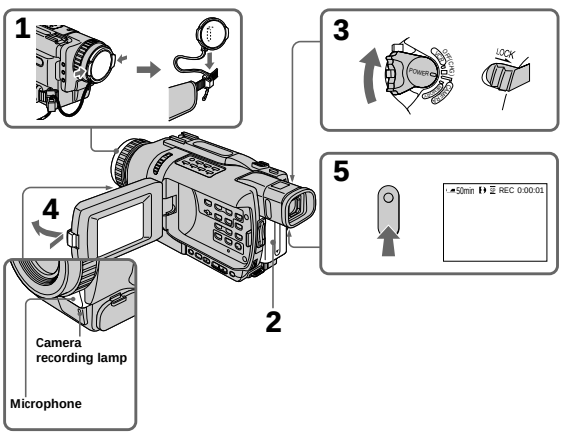
To prevent accidental erasure
Slide the write-protect tab on the cassette to expose the red mark.



Recording a picture

Your camcorder automatically focuses for you.

(1) Remove the lens cap by pressing both knobs on its sides and attach the lens cap to the grip strap.
(2) Install the power source and insert a cassette. See "Step 1" to "Step 3" for more information (p. 12 to 19).
(3) Set the POWER switch to CAMERA while pressing the small green button.
This sets your camcorder to the standby mode.
(4) Open the LCD panel while pressing OPEN. The viewfinder automatically turns off.
(5) Press START / STOP. Your camcorder starts recording. The REC indicator appears on the screen. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START / STOP again.
The recording lamp lights up in the viewfinder when you record with the viewfinder.



Notes
• Fasten the grip strap firmly.
• Do not touch the built-in microphone during recording.

Recording a picture

Note on recording mode
Your camcorder records and plays back in the SP (standard play) mode and in the LP (long play) mode. Select SP or LP in the menu settings (p. 104). In the LP mode, you can record 1.5 times as long as in the SP mode. When you record a tape in the LP mode on your camcorder, we recommend that you play back the tape on your camcorder.

Note on the LOCK switch (DCR-TRV340 only)
When you slide the LOCK switch to the right, the POWER switch can no longer be set to MEMORY accidentally. The LOCK switch is released as the default setting.

To enable smooth transition
Transition between the last scene you recorded and the next scene is smooth as long as you do not eject the cassette even if you turn off your camcorder.
However, check the following:
– Do not mix recordings in the SP mode and in the LP mode on one tape.
– When you change the battery pack, set the POWER switch to OFF (CHG).

If you leave your camcorder in the standby mode for three minutes while the cassette is inserted
Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To resume the standby mode, set the POWER switch to OFF (CHG) once, then turn it to CAMERA again. However, your camcorder does not turn off automatically while the cassette is not inserted.

When you record in the SP and LP modes on one tape or you record some scenes in the LP mode
• The transition between scenes may not be smooth.
• The playback picture may be distorted or the time code may not be written properly between scenes.

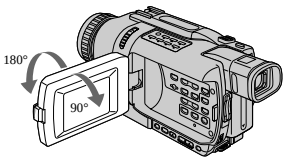
Recording data
The recording data (date / time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the tape. To display the recording data, press DATA CODE on the Remote Commander during playback.

After recording

(1) Set the POWER switch to OFF (CHG).
(2) Close the LCD panel.
(3) Eject the cassette.
(4) Remove the battery pack.

Adjusting the LCD screen

The LCD panel can be opened up to 90 degrees. The LCD panel moves about 90 degrees to the viewfinder side and about 180 degrees to the lens side.



When closing the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

Note

When using the LCD screen except in the mirror mode, the viewfinder automatically turns off.

When you use the LCD screen outdoors in direct sunlight

The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

When you adjust angles of the LCD panel

Make sure if the LCD panel is opened up to 90 degrees.

When recording with the LCD panel opened

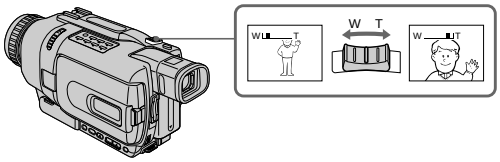
Recording time becomes shorter a little compared with when recording with the LCD panel closed.

Brightness of the LCD screen

You can adjust the brightness of the LCD screen. Select LCD B.L. or LCD BRIGHT in the menu settings (p. 104). Even if you adjust the LCD B.L. or LCD BRIGHT, the recorded picture will not be affected.

Using the zoom feature

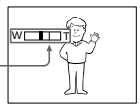
Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom. Using the zoom function sparingly results in better-looking recordings.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)



To use zoom greater than 25×

Zoom greater than 25× is performed digitally. To activate digital zoom, select the digital zoom power in D ZOOM in the menu settings. (p. 104)
The digital zoom function is set to OFF as the default setting.

The right side of the bar shows the digital zooming zone.
The digital zooming zone appears when you select the digital zoom power in the menu settings.



Notes on digital zoom

- Digital zoom starts to function when zoom exceeds 25×.
- The picture quality deteriorates as you go towards the "T" side.

When you shoot close to a subject

If you cannot get a sharp focus, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

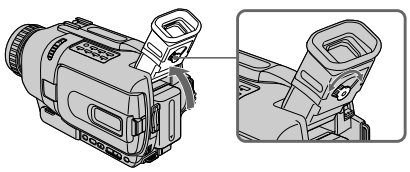
When the POWER switch is set to MEMORY (DCR-TRV340 only)

You cannot use the digital zoom.

Adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the indicators in the viewfinder come into sharp focus.

Lift up the viewfinder and move the viewfinder lens adjustment lever.



Viewfinder backlight

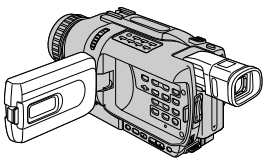
You can change the brightness of the backlight. Select VF B.L. in the menu settings (p. 104). Even if you adjust the VF B.L., the recorded picture will not be affected.

Shooting with the Mirror Mode

This feature allows the camera subject to view him-or herself on the LCD screen. The subject uses this feature to check his or her own image on the LCD screen while you look at the subject in the viewfinder.

Set the POWER switch to CAMERA or MEMORY (DCR-TRV340 only).
Rotate the LCD screen 180 degrees.

The indicator appears in the viewfinder and on the LCD screen.
❚❚● appears in the standby mode, and ● appears in the recording mode. Some of other indicators appear mirror-reversed and others are not displayed.



Pictures in the mirror mode

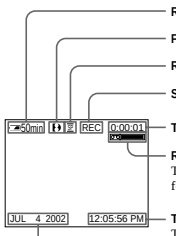
The picture on the LCD is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode

ZERO SET MEMORY on the Remote Commander does not work.

Indicators displayed in the recording mode

Indicators are not recorded on tapes.



Remaining battery time

Format

Recording mode

STBY/REC

Time code/Tape counter

Remaining tape
This appears after the POWER switch is set to CAMERA for a while.

Time
This is displayed for five seconds after the POWER switch is set to CAMERA or MEMORY (DCR-TRV340 only).

Date
This is displayed for five seconds after the POWER switch is set to CAMERA or MEMORY (DCR-TRV340 only).

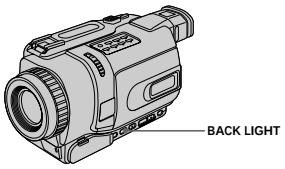
Remaining battery time indicator during recording
The remaining battery time indicator roughly indicates the continuous recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

Time code (for tapes recorded in the Digital8 system only)
The time code indicates the recording or playback time, "0:00:00" (hours:minutes: seconds) in CAMERA mode and "0:00:00:00" (hours:minutes:seconds:frames) in VCR mode. You cannot rewrite only the time code.
When you play back tapes recorded in the Hi8/standard 8 system, the tape counter appears on the screen.
You cannot reset the time code or the tape counter.

Shooting backlit subjects – BACK LIGHT

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

In CAMERA or MEMORY (DCR-TRV340 only) mode, press BACK LIGHT.
The indicator appears on the screen.
To cancel, press BACK LIGHT again.

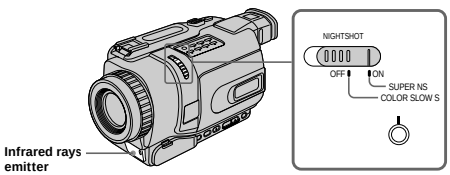


If you press EXPOSURE when shooting backlit subjects
The backlight function will be canceled.

Shooting in the dark – NightShot/Super NightShot/Color Slow Shutter

The NightShot function enables you to shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.

In CAMERA or MEMORY (DCR-TRV340 only) mode, slide NIGHTSHOT to ON.
The and "NIGHTSHOT" indicators flash on the screen.
To cancel the NightShot function, slide NIGHTSHOT to OFF.



Using Super NightShot

The Super NightShot function makes subjects up to 16 times brighter than those recorded in the NightShot mode.

(1) In CAMERA mode, slide NIGHTSHOT to ON. The and "NIGHTSHOT" indicators flash on the screen.
(2) Press SUPER NS. The S and "SUPER NIGHTSHOT" indicators flash on the screen.
To cancel the Super NightShot mode, press SUPER NS again.

Using the NightShot Light

The picture will be clearer with the NightShot Light on. To enable NightShot Light, set N.S.LIGHT to ON in the menu settings (The default setting is ON.) (p. 104).

Using Color Slow Shutter

The Color Slow Shutter function enables you to record color images in a dark place.

(1) Slide NIGHTSHOT to OFF in CAMERA mode.
(2) Press COLOR SLOW S.
The and COLOR SLOW SHUTTER indicators flash on the screen.
To cancel the Color Slow Shutter function, press COLOR SLOW S again.

Notes
- Do not use the NightShot mode in bright places (e.g. outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colors.
- If focusing is difficult with the autofocus mode when using the NightShot function, focus manually.
- You cannot use the Color Slow Shutter function in dark places where the illumination is 0 lux.

While using the NightShot function, you can not use the following functions:
– Exposure
– PROGRAM AE

While using the Super NightShot or Color Slow Shutter function, you cannot use the following functions:
– Fader
– Digital effects
– Exposure
– PROGRAM AE
– Memory Photo recording

While using the Super NightShot or Color Slow Shutter function
The shutter speed is automatically adjusted depending on the brightness. At this time, moving pictures may slow down.

When the POWER switch is set to MEMORY (DCR-TRV340 only)
You cannot use the following functions:
– Super NightShot
– Color Slow Shutter

NightShot Light
NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet).

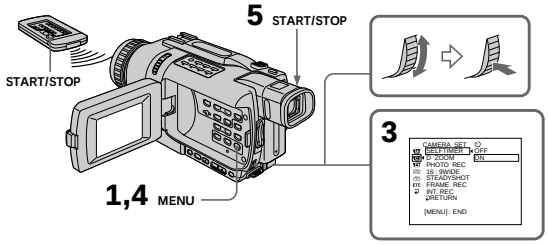
Recording a picture

Self-timer recording

– DCR-TRV340 only

Recording with the self-timer starts in 10 seconds automatically.
You can also use the Remote Commander for this operation.

(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select SELFTIMER in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(4) Press MENU to make the menu settings disappear.
(5) Press START / STOP.
The self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.
To stop recording, press START / STOP again.



To stop the countdown
Press START / STOP.
To restart the countdown, press START / STOP again.

To record still images on tapes using the self-timer
Press PHOTO in step 5 (P. 40).

To cancel self-timer recording
Set SELFTIMER to OFF in the menu settings in the standby mode.

Note
The self-timer recording mode is automatically canceled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

When the POWER switch is set to MEMORY (DCR-TRV340 only)
You can also record still images on "Memory Stick"s with the self-timer (p. 126).

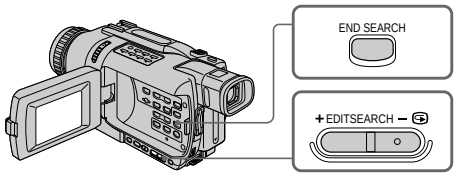
Checking recordings – END SEARCH/EDITSEARCH/Rec Review

Notes
- END SEARCH, EDITSEARCH and Rec Review work only for tapes recorded in the Digital8 system.
- If you start recording after using the end search function, occasionally, the transition between the last scene you recorded and the next scene may not be smooth.
- Once you eject the cassette after you have recorded on the tape, the end search function does not work.

If a tape has a blank portion between recorded portions
The end search function may not work correctly.

Checking recordings
– END SEARCH/EDITSEARCH/Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



END SEARCH

You can go to the end of the recorded section after you record.

In the standby mode, press END SEARCH.
The last five seconds of the recorded section are played back and your camcorder returns to the standby mode. You can monitor the sound from the speaker or headphones.

EDITSEARCH

You can search for the next recording start point.

In the standby mode, hold down the + / – side of EDITSEARCH. The recorded portion is played back.
+ : to go forward
– : to go backward
Release EDITSEARCH to stop playback. If you press START / STOP, re-recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Rec Review

You can check the last recorded section.

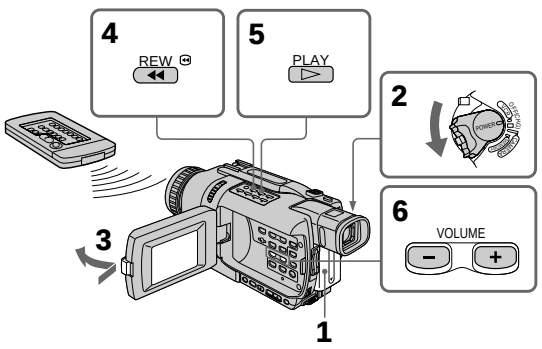
In the standby mode, press the – side of EDITSEARCH momentarily.
The section you have stopped most recently will be played back for a few seconds, and then your camcorder will return to the standby mode. You can monitor the sound from the speaker or headphones.

— Playback – Basics —

Playing back a tape

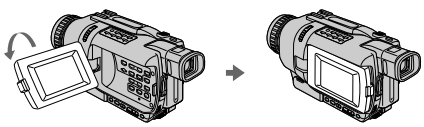
You can monitor the playback picture on the LCD screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder.
You can control playback using the Remote Commander supplied with your camcorder.

(1) Install the power source and insert the recorded tape.
(2) Set the POWER switch to VCR while pressing the small green button.
(3) Open the LCD panel while pressing OPEN.
(4) Press ◄◄ to rewind the tape.
(5) Press ► to start playback.
(6) To adjust the volume, press either of the two buttons on VOLUME. When you close the LCD panel, sound is muted.



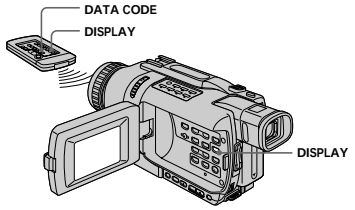
To stop playback
Press ■.

When monitoring on the LCD screen
You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.



To display the screen indicators – Display function

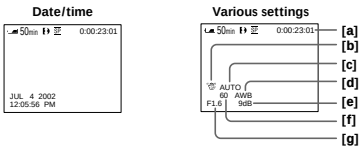
Press DISPLAY on your camcorder or the Remote Commander supplied with your camcorder. The indicators appear on the screen.
To make the indicators disappear, press DISPLAY again.



About date/time and various settings

Your camcorder automatically records not only pictures on the tape but also the recording data (date/time or various settings when recorded) **(Data code)**.
Use the Remote Commander for this operation.

① Set the POWER switch to VCR, then playback a tape.
② Press DATA CODE on the Remote Commander.
The display changes as follows:
date/time → various settings (SteadyShot, exposure, white balance, gain, shutter speed, aperture value) → no indicator



[a] Time code/Tape counter
[b] SteadyShot off
[c] Exposure mode
[d] White balance
[e] Gain
[f] Shutter speed
[g] Aperture value

To not display various settings
Set DATA CODE to DATE in the menu settings (p. 104).
The display changes as follows when you press DATA CODE on the Remote Commander:
date/time ⟷ no indicator

Notes on the data code function
- The data code function works only for tapes recorded in the Digital8 system.
- Various settings of the recording data are not recorded when recording images on "Memory Stick"s (DCR-TRV340 only).

Recording data
Recording data is your camcorder's information when you have recorded. In the recording mode, the recording data will not be displayed.

When you use data code function, bars (-- -- --) appear if:
– A blank portion of the tape is being played back.
– The tape is unreadable due to tape damage or noise.
– The tape was recorded by a camcorder without the date and time set.

Data code
When you connect your camcorder to the TV, the data code appears on the TV screen.

Remaining battery time indicator during playback
The indicator indicates the approximate continuous playback time. The indicator may not be correct, depending on the conditions in which you are playing back. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time to be displayed.

Various playback modes

To operate video control buttons, set the POWER switch to VCR.

To playback pause (view a still image)
Press ❚❚ during playback. To resume normal playback, press ❚❚ or ►.

To advance the tape
Press ►► in the stop mode. To resume normal playback, press ►.

To rewind the tape
Press ◄◄ in the stop mode. To resume normal playback, press ►.

To change the playback direction
Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ►.

To locate a scene monitoring the picture (picture search)
Keep pressing ◄◄ or ►► during playback. To resume normal playback, release the button.

To monitor high-speed pictures while advancing or rewinding the tape (skip scan)
Keep pressing ◄◄ while rewinding or ►► while advancing the tape. To resume rewinding or advancing, release the button.

To view pictures at slow speed (slow playback)
Press ❚► on the Remote Commander during playback. For slow playback in the reverse direction, press <, then press ❚► on the Remote Commander. To resume normal playback, press ►.

To view pictures at double speed
Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press <, then press ×2 on the Remote Commander. To resume normal playback, press ►.

To view pictures frame-by-frame
Press ❚►❚ on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press ◄❚❚. To resume normal playback, press ►.

To search the last scene recorded (END SEARCH)
Press END SEARCH in the stop mode. The last five seconds of the recorded section plays back and stops.

In the various playback modes
- Noise may appear when your camcorder plays back tapes recorded in the Hi8/standard 8 system.
- Sound is muted.
- The previous recording may appear as a mosaic image when playing back in the Digital8 system.

Notes on the playback pause mode
- When the playback pause mode lasts for three minutes, your camcorder automatically enters the stop mode. To resume playback, press ►.
- The previous recording may appear.

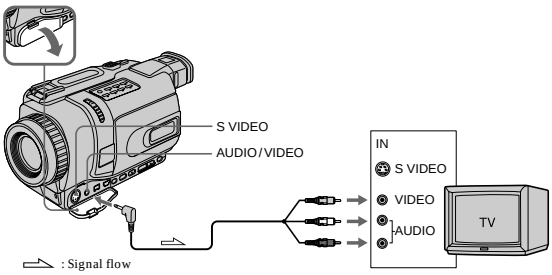
Slow playback for tapes recorded in the Digital8 system
Slow playback can be performed smoothly on your camcorder; however, this function does not work for an output signal through the DV IN/OUT jack.

When you play back a tape in reverse
Horizontal noise may appear at the center, or top and bottom of the screen. This is not a malfunction.

Viewing recordings on TV

Connect your camcorder to your TV with the A/V connecting cable supplied with your camcorder to watch playback pictures on the TV screen. You can operate the video control buttons in the same way as when you monitor playback pictures on the LCD screen. When monitoring playback pictures on the TV screen, we recommend that you power your camcorder from a wall outlet using the AC power adaptor (p. 16). Refer to the operating instructions of your TV.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable supplied with your camcorder. Then, set the TV/VCR selector on the TV to VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect the S video cable (optional) to the S video jacks on both your camcorder and the TV.

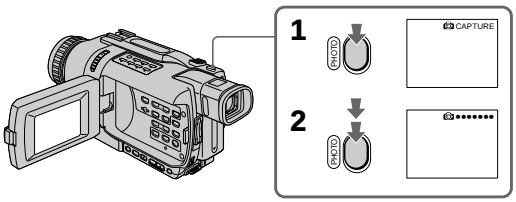
To display the screen indicators on TV
Set DISPLAY to V-OUT/LCD in the menu settings (p. 104).
Then, press DISPLAY on your camcorder. To turn the screen indicators off, press DISPLAY on your camcorder again.

Recording still images on a tape – Tape Photo recording

You can record still images such as photographs.
You can record about 510 images in the SP mode and about 765 images in the LP mode on a tape which can record for 60 minutes in the SP mode.
Besides the operation described here, your camcorder can record still images on "Memory Stick"s (DCR-TRV340 only) (p. 122).

Before operation
Set PHOTO REC to TAPE in the menu settings. (The default setting is MEMORY.) (DCR-TRV340 only) (p. 104)

(1) In the standby mode, keep pressing PHOTO lightly until a still image appears.
The CAPTURE indicator appears. Recording does not start yet.
To change the still image, release PHOTO, select a still image again, and then press and hold PHOTO lightly.
(2) Press PHOTO deeper.
The still image on the screen is recorded for about seven seconds. The sound during those seven seconds is also recorded.
The still image is displayed on the screen until recording is completed.



Notes
• During Tape Photo recording, you cannot change the mode or setting.
• You cannot use PHOTO during the following operations:
– Fader
– Digital effects
• When recording a still image, do not shake your camcorder. The image may fluctuate.

If you record a moving subject with tape photo recording function
The image may fluctuate when you play back the still image on other equipment. This is not a malfunction.

To use tape photo recording function using the Remote Commander
Press PHOTO on the Remote Commander. Your camcorder records an image on the screen immediately.

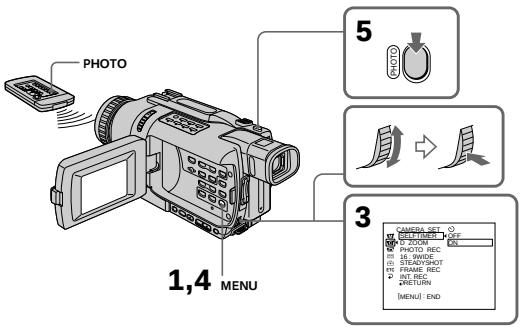
To use the tape photo recording function during normal CAMERA recording
You cannot check an image on the screen by pressing PHOTO lightly. Press PHOTO deeper. The still image is then recorded for about seven seconds, and your camcorder returns to the standby mode.

To record clear and less fluctuated still images
We recommend that you record on "Memory Stick"s.
You can record still images on "Memory Stick"s even in CAMERA mode. (P.122) (DCR-TRV340 only)

Self-timer recording

– DCR-TRV340 only
You can record still images on tapes with the self-timer.
You can also use the Remote Commander for this operation.

(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select SELFTIMER in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(4) Press MENU to make the menu settings disappear.
(5) Press PHOTO deeper.
The self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.

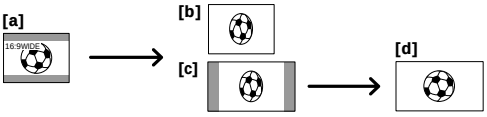


To cancel self-timer recording
In the standby mode, set SELFTIMER to OFF in the menu settings.
You cannot cancel self-timer recording using the Remote Commander.

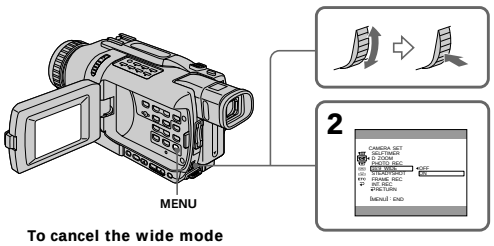
Note
The self-timer recording mode is automatically canceled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

Using the wide mode

You can record a 16:9 wide picture to watch on a 16:9 wide-screen TV (16:9WIDE). Black bands appear on the screen during recording in 16:9 WIDE mode **[a]**. The picture during playing back on a normal TV **[b]** or a wide-screen TV **[c]** are compressed in the widthwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images **[d]**.



(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC to select 16:9 WIDE in , then press the dial.
(3) Turn the SEL / PUSH EXEC to select ON, then press the dial.



To cancel the wide mode
Set 16:9WIDE to OFF in the menu settings.

In the wide mode
You cannot operate the following functions:
– OLD MOVIE
– BOUNCE
– Memory Photo recording

During recording
You cannot select or cancel the wide mode.
When you cancel the wide mode, set your camcorder to the standby mode and then set 16:9WIDE to OFF in the menu settings.

Connection for a TV
Pictures recorded in the 16:9WIDE mode automatically appear on the TV screen at full size when:
– You connect your camcorder to a TV that is compatible with the video ID (ID-1 / ID-2) system.
– You connect your camcorder to the S video jack on the TV.

Using the wide mode

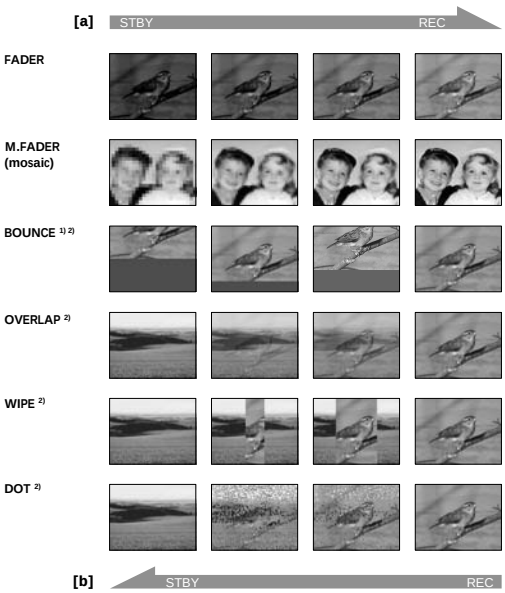
ID-1 system
The ID-1 system sends aspect ratio (screen horizontal / vertical ratio) information (16:9, 4:3, or letter box) with video signals. If you connect a TV compatible with the ID-1 system, the screen size is automatically selected.

ID-2 system
The ID-2 system sends a copyright protection signal with ID-1 signals inserted between video signals when you connect your camcorder to other equipment by an A / V connecting cable.

If 16:9WIDE is set to ON
The SteadyShot function does not work. If you set 16:9WIDE to ON in the menu settings when the SteadyShot function is working, ☝ flashes and the SteadyShot function does not function.

Using the fader function

You can fade in or out to give your recording a more professional appearance.

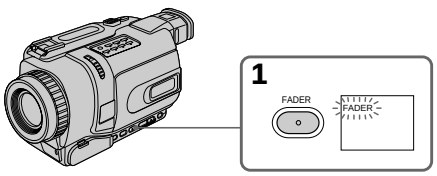


MONOTONE
When fading in, the picture gradually changes from black-and-white to color.
When fading out, the picture gradually changes from color to black-and-white.

1) You can use this function when D ZOOM is set to OFF in the menu settings.
2) Fade in only

Using the fader function

(1) When fading in [a]
In the standby mode, press FADER until the desired fader indicator flashes.
When fading out [b]
In the recording mode, press FADER until the desired fader indicator flashes.
The indicator changes as follows:
FADER → M.FADER → BOUNCE → MONOTONE → WIPE → DOT → OVERLAP → no indicator → FADER
The last selected fader mode is indicated first of all.
(2) Press START / STOP. The fader indicator stops flashing.
After fade in / out ends, your camcorder automatically returns to the normal mode.



To cancel the fader function

Before pressing START / STOP, press FADER repeatedly until the indicator disappears.

Notes
- The overlap, wipe and dot functions work only for tapes recorded in the Digital8 system.
- You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions:
  – Digital effects
  – Color Slow Shutter
  – Super NightShot
  – Photo recording
  – Interval recording
  – Frame recording

When you select OVERLAP, WIPE, or DOT
Your camcorder automatically stores the picture recorded on tape. While the picture is being stored, the indicators flash fast, and the picture from the tape appears on the screen. At this stage, the picture may not be recorded clearly, depending on the tape condition.

Using the fader function

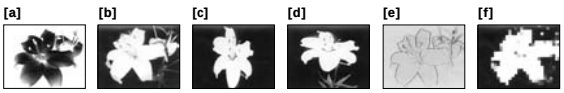
While using the bounce function, you cannot use the following functions:
– Focus
– Zoom
– Picture effects

Note on the bounce function
The BOUNCE indicator does not appear in the following mode or functions:
– When D ZOOM is activated in the menu settings
– Wide mode
– Picture effects
– PROGRAM AE

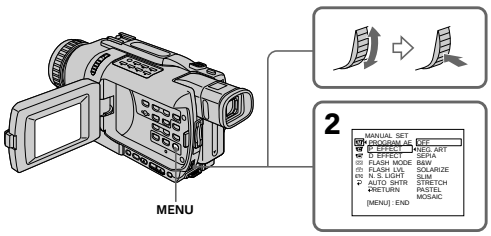
Using special effects – Picture effect

You can digitally process pictures to obtain special effects like those in films or on the TV.

NEG. ART [a] : The color and brightness of the picture is reversed.
SEPIA : The picture appears in sepia.
B&W : The picture appears in monochrome (black-and-white).
SOLARIZE [b] : The light intensity becomes clearer to make the picture look more like an illustration.
SLIM [c] : The picture expands vertically.
STRETCH [d] : The picture expands horizontally.
PASTEL [e] : The contrast of the picture is emphasized to make the picture look more like an animated cartoon.
MOSAIC [f] : The picture appears mosaic-patterned.



(1) In CAMERA mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select P EFFECT in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select the desired picture effect mode, then press the dial.



To cancel the picture effect
Set P EFFECT to OFF in the menu settings.

While using the picture effect function
You cannot operate the following functions:
– OLD MOVIE with the digital effect function.
– Memory Photo recording

When you set the POWER switch to OFF (CHG)
Picture effects are automatically canceled.

Using special effects – Digital effect

You can add special effects to recorded picture using the various digital functions. Sound is recorded normally.

STILL
You can record a still image so that it is superimposed on a moving picture.

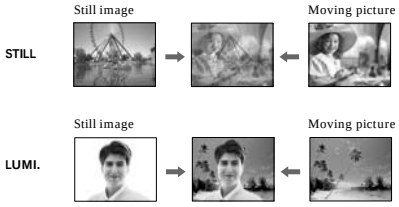
FLASH (FLASH MOTION)
You can record still images successively at constant intervals.

LUMI. (LUMINANCEKEY)
You can swap a brighter area in a still image with a moving picture.

TRAIL
You can record the picture so that an incidental image like a trail is left.

SLOW SHTR (SLOW SHUTTER)
You can slow down the shutter speed. The slow shutter mode is good for recording dark picture more brightly.

OLD MOVIE
You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON, picture effect to SEPIA, and sets the appropriate shutter speed.



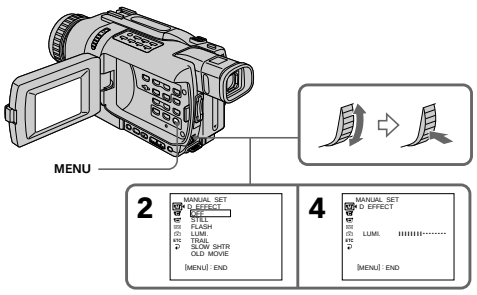
Using special effects – Digital effect

(1) In CAMERA mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select D EFFECT in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select the desired digital effect mode.
(4) Press the SEL / PUSH EXEC dial. The bars appear on the screen. In the STILL and LUMI. modes, the still image is stored in memory.
(5) Turn the SEL / PUSH EXEC dial to adjust the effect as follows:

Items to be adjusted

STILL	The rate of the still image you want to superimpose on the moving picture
FLASH	The interval of flash motion
LUMI.	The color scheme of the area in the still image which is to be swapped with a moving picture
TRAIL	The vanishing time of the incidental picture
SLOW SHTR	Shutter speed. The larger the shutter speed number, the slower the shutter speed becomes.
OLD MOVIE	No adjustment necessary

The more bars there are on the screen, the stronger the digital effect. The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL.



To cancel the digital effect
Set D EFFECT to OFF in the menu settings.

Using special effects – Digital effect

Notes
• The following functions do not work during digital effects:
– Fader
– Photo recording
– Super NightShot
– Color Slow Shutter
• The PROGRAM AE function does not work in the slow shutter mode.
• The following functions do not work in the old movie mode:
– Wide mode
– Picture effects
– PROGRAM AE

When you set the POWER switch to OFF (CHG)
Digital effects are automatically canceled.

When recording in the slow shutter mode
Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/30
SLOW SHTR 2	1/15
SLOW SHTR 3	1/8
SLOW SHTR 4	1/4

Using the PROGRAM AE function

You can select the PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

Spotlight
This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light in the theater.

Soft portrait
This mode brings out the subject while creating a soft background for subjects such as people or flowers.

Sports lesson
This mode minimizes camera shake on fast-moving subjects such as in tennis or golf.

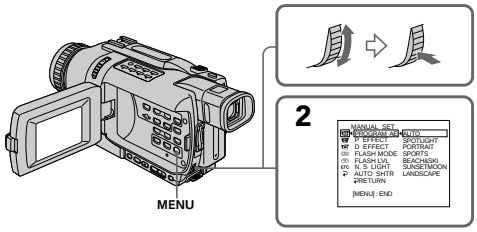
Beach & ski
This mode prevents peoples' faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

Sunset & moon
This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

Landscape
This mode is for when you are recording distant subjects such as mountains and prevents your camcorder from focusing on glass or metal mesh in windows' when you are recording a subject behind glass or a screen.

Using the PROGRAM AE function

(1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select PROGRAM AE in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select the desired mode.



To cancel the PROGRAM AE function
Set PROGRAM AE to AUTO in the menu settings.

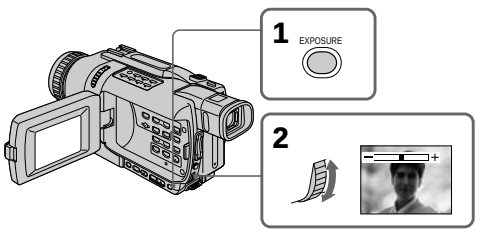
Notes
- Because your camcorder is set to focus only on subjects in the middle to far distance, you cannot take close-ups in the following modes:
  – Spotlight
  – Sports lesson
  – Beach & ski
- Your camcorder is set to focus only on distant subjects in the following modes:
  – Sunset & moon
  – Landscape
- The following functions do not work in the PROGRAM AE mode:
  – Color Slow Shutter
  – Slow shutter
  – OLD MOVIE
  – BOUNCE
- While setting NIGHTSHOT to ON, the PROGRAM AE function does not work. (The indicator flashes.)
- The PROGRAM AE function does not work in the Color Slow Shutter mode.

If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp
Flickering or changes in color may occur in the following modes. If this happens, turn the PROGRAM AE function off.
– Soft portrait
– Sports lesson

Adjusting the exposure manually

You can manually adjust and set the exposure. Normally, exposure is automatically adjusted.
Adjust the exposure manually in the following cases:
– When the subject is backlit
– When shooting bright subjects and dark backgrounds
– When recording dark pictures (e.g. night scenes) faithfully

(1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press EXPOSURE. The exposure indicator appears on the screen.
(2) Turn the SEL / PUSH EXEC dial to adjust the brightness.



To return to the automatic exposure mode
Press EXPOSURE to turn off the indicator.

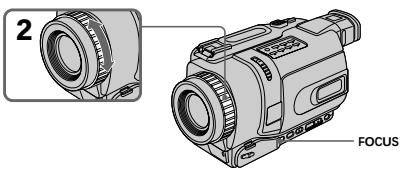
Note
When you adjust the exposure manually, the following functions do not work:
– BACKLIGHT
– Color Slow Shutter

Your camcorder automatically returns to the automatic mode:
– If you change the PROGRAM AE mode
– If you slide NIGHTSHOT to ON

Focusing manually

You can gain better results by manually adjusting the focus in the following cases. Normally, focus is automatically adjusted:
- The autofocus mode is not effective when shooting:
  – Subjects through glass coated with water droplets.
  – Horizontal stripes.
  – Subjects with little contrast with backgrounds such as walls and sky.
- When you want to change the focus from a subject in the foreground to a subject in the background.
- Shooting a stationary subject when using a tripod.

(1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press FOCUS. The indicator appears on the screen.
(2) Turn the focus ring to sharpen focus.



To return to the autofocus mode
Press FOCUS to turn off the indicator.

To focus precisely
It is easier to focus on subjects if you adjust the zoom to shoot at the "W" (wide-angle) after focusing at the "T" (telephoto) position.

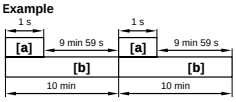
When you shoot close to the subject
Focus at the end of the "W" (wide-angle) position.

changes to the following indicators:
when recording a distant subject.
when the subject is too close to focus on.

Interval recording

You can make a time-lapse recording by setting your camcorder to automatically record and standby sequentially. You can achieve an excellent recording for flowering, gradual appearances, etc., with this function.

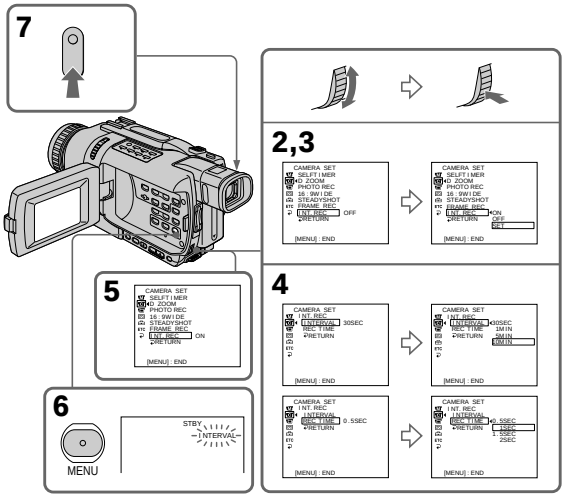
Example



[a] REC TIME
[b] INTERVAL

(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select INT. REC in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select SET, then press the dial.
(4) Set INTERVAL and REC TIME.
① Turn the SEL / PUSH EXEC dial to select INTERVAL, then press the dial.
② Turn the SEL / PUSH EXEC dial to select the desired interval time, then press the dial.
The time: 30SEC ↔ 1MIN ↔ 5MIN ↔ 10MIN
③ Turn the SEL / PUSH EXEC dial to select REC TIME, then press the dial.
④ Turn the SEL / PUSH EXEC dial to select the desired recording time, then press the dial.
The time: 0.5SEC ↔ 1SEC ↔ 1.5SEC ↔ 2SEC
⑤ Turn the SEL / PUSH EXEC dial to select ↩ RETURN, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(6) Press MENU to make the menu settings disappear. The INTERVAL indicator flashes.
(7) Press START / STOP to start interval recording. The INTERVAL indicator lights up.

Interval recording



To cancel interval recording

Perform either of the following:
– Set INT. REC to OFF in the menu settings.
– Set the POWER switch to other than CAMERA.

To perform normal recording during interval recording

You can perform normal recording only once during INTERVAL.
Press START / STOP. The INTERVAL indicator flashes, and normal recording starts. To stop normal recording, press START / STOP again.

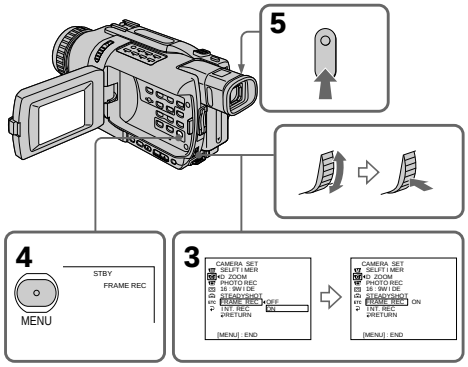
On recording time

There may be a discrepancy in the recording time of up to + / – six frames from the selected time.

Frame by frame recording – Frame recording

You can make a recording with a stop-motion animated effect using frame recording. To create this effect, alternately move the subject a little and make a frame recording. We recommend that you use a tripod, and operate your camcorder using the Remote Commander after step 5.

(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select FRAME REC in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(4) Press MENU to make the menu settings disappear.
The FRAME REC indicator appears.
(5) Press START / STOP to start frame recording. Your camcorder makes a recording for about six frames, and returns to recording standby.
(6) Move the subject, and repeat step 5.



To cancel the frame recording

Perform either of the following:
– Set FRAME REC to OFF in the menu settings.
– Set the POWER switch to other than CAMERA.

Note

The remaining tape time is not indicated correctly if you use this function continuously.

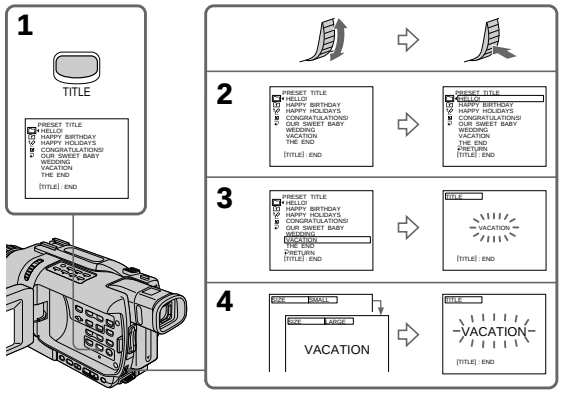
When using the frame recording function

The last recorded cut is longer than other cuts.

Superimposing a title

You can select one of eight preset titles and two custom titles (p. 59). You can also select the language, color, size and position of titles.

(1) In the standby mode, press TITLE to display the title menu. The title menu display appears on the screen.
(2) Turn the SEL / PUSH EXEC dial to select , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select the desired title, then press the dial. The titles are displayed in the language you selected.
(4) Change the color, size, or position, if necessary.
① Turn the SEL / PUSH EXEC dial to select COLOR, SIZE, or POSITION, then press the dial. The selected item appears on the screen.
② Turn the SEL / PUSH EXEC dial to select the desired item, then press the dial.
③ Repeat steps ① and ② until the title is laid out as desired.
(5) Press the SEL / PUSH EXEC dial again to complete the setting.
(6) Press START / STOP to start recording.
(7) When you want to stop recording the title, press TITLE.



Superimposing a title

To superimpose the title while you are recording

Press TITLE while you are recording, and carry out steps 2 to 5. When you press the SEL / PUSH EXEC dial at step 5, the title is recorded.

To select the language of a preset title

If you want to change the language, select before step 2. Then select the desired language and return to step 2.

If you display the menu while superimposing a title

The title is not recorded while the menu is displayed.

To use a custom title

If you want to use a custom title, select in step 2.

Title setting

- The title color changes as follows:
  WHITE ↔ YELLOW ↔ VIOLET ↔ RED ↔ CYAN ↔ GREEN ↔ BLUE
- The title size changes as follows:
  SMALL ↔ LARGE
  You cannot input 13 characters or more in LARGE size. If you input more than 12 characters, the title size returns to SMALL even you select LARGE.
- The title position changes as follows:
  1↔ 2↔ 3↔ 4↔ 5↔ 6↔ 7↔ 8↔ 9
  The larger the position number, the lower the title is positioned.
  When you select the title size LARGE, you cannot choose position 9.

When you are selecting and setting the title

You cannot record the title displayed on the screen.

When you superimpose a title while you are recording

The beep does not sound.

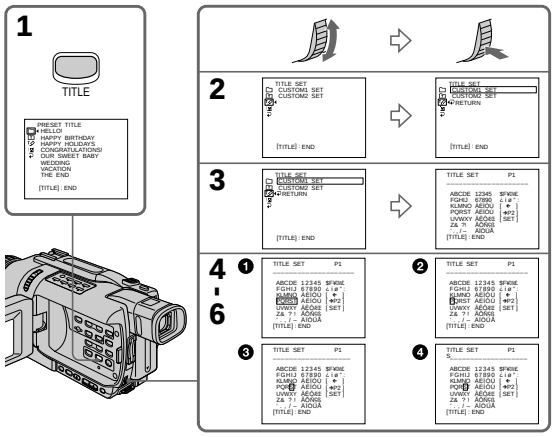
While you are playing back

You can superimpose a title. However, the title is not recorded on tape.
You can record a title when you dub a tape connecting your camcorder to the VCR with the A / V connecting cable. If you use the i.LINK cable instead of the A / V connecting cable, you cannot record the title.

Making your own titles

You can make up to two titles and store them in your camcorder. Each title can have up to 20 characters.

(1) In the standby or VCR mode, press TITLE.
(2) Turn the SEL / PUSH EXEC dial to select , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select CUSTOM1 SET or CUSTOM2 SET, then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select the column of the desired character, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select the desired character, then press the dial.
(6) Repeat steps 4 and 5 until you have selected all characters and completed the title.
(7) To finish making your own titles, turn the SEL / PUSH EXEC dial to select [SET], then press the dial. The title is stored in memory.
(8) Press TITLE to make the title menu disappear.



Making your own titles

To change a title you have stored

In step 3, select CUSTOM1 SET or CUSTOM2 SET, depending on which title you want to change, then press the SEL / PUSH EXEC dial.
Turn the SEL / PUSH EXEC dial to select [←], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

If you take three minutes or longer to enter characters in the standby mode while a cassette is in your camcorder

The power automatically goes off. The characters you have entered remain stored in memory. Set the POWER switch to OFF (CHG) once, and turn it to CAMERA again, then proceed from step 1.
We recommend setting the POWER switch to VCR or removing the cassette so that your camcorder does not automatically turn off while you are entering title characters.

If you select [→P2]

The menu for selecting alphabet and Russian characters appear. Select [→P1] to return to the previous screen.

To erase a character

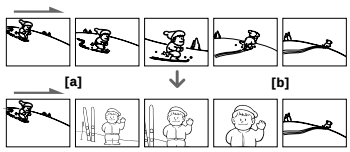
Select [←]. The last character is erased.

To enter a space

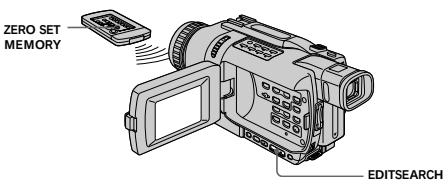
Select [Z& ?!], then select the blank part.

Inserting a scene

You can insert a scene in the middle of a recorded tape by setting the start and end points. The previously recorded frames between these start and end points will be erased.
Use the Remote Commander for this operation.



(1) In the standby mode, keep pressing EDITSEARCH, and release the button at the insert end point **[b]**.
(2) Press ZERO SET MEMORY on the Remote Commander.
The ZERO SET MEMORY indicator flashes and the counter resets to zero.
(3) Keep pressing the – side of EDITSEARCH and release the button at the insert start point **[a]**.
(4) Press START / STOP to start recording.
The scene is inserted. Recording stops automatically near the counter zero point. Your camcorder returns to the standby mode.



Notes

- The zero set memory function works only for tapes recorded in the Digital8 system.
- The picture and the sound may be distorted at the end of the inserted section when it is played back.

If a tape has a blank portion between recorded portions

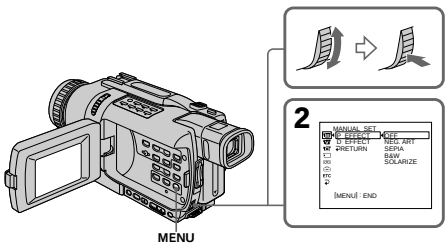
The zero set memory function may not work correctly.

— Advanced Playback Operations —

Playing back tapes with picture effects

During playback, you can process a scene using the following picture effect functions: NEG.ART, SEPIA, B&W and SOLARIZE.

(1) In the playback or playback pause mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select P EFFECT in , then press the dial.
(3) Turn the SEL / PUSH EXEC dial to select the desired picture effect mode, then press the dial.
For details of each picture effect function, see page 46.



To cancel the picture effect

Set P EFFECT to OFF in the menu settings.

Notes

- Picture effect functions work only for tapes recorded in the Digital8 system.
- You cannot process externally input scenes using the picture effect functions.
- You cannot record pictures on a tape on your camcorder when you have processed the picture using the picture effect function. However, you can record pictures on a "Memory Stick" (DCR-TRV340 only) (p. 133, 140), or on a VCR using your camcorder as a player.

Pictures processed by picture effect functions

Pictures processed by picture effect functions are not output through the DV IN / OUT jack.

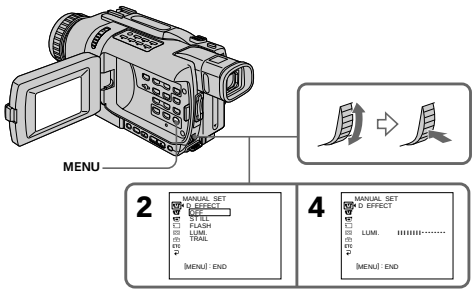
When you set the POWER switch to OFF (CHG) or stop playing back

The picture effect function is automatically canceled.

Playing back tapes with digital effects

During playback, you can process a scene using the following digital effect functions: STILL, FLASH, LUMI. and TRAIL.

(1) In the playback mode, press MENU to display the menu settings.
(2) Turn SEL / PUSH EXEC dial to select D EFFECT in , then press the dial.
(3) Turn SEL / PUSH EXEC dial to select the desired digital effect mode, then press the dial.
The bars appear on the screen.
In the STILL or LUMI. mode, the picture is captured and is stored in memory as a still image at the time you press the SEL / PUSH EXEC dial.
(4) Turn the SEL / PUSH EXEC dial to adjust the effect.
For details of each digital effect function, see page 47.



To cancel the digital effect

Set D EFFECT to OFF in the menu settings.

Notes

- Digital effect functions work only for tapes recorded in the Digital8 system.
- You cannot process externally input scenes using digital effect functions.
- You cannot record images on a tape on your camcorder when you have processed the image using digital effect functions. However, you can record images on a "Memory Stick" (DCR-TRV340 only) (p. 133, 140), or on a VCR using your camcorder as a player.

Pictures processed by digital effect functions

Pictures processed by digital effect functions are not output through the DV IN / OUT jack.

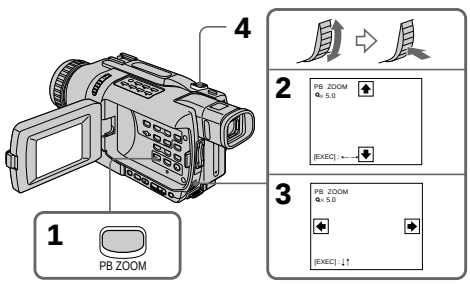
When you set the POWER switch to OFF (CHG) or stop playing back

The digital effect function is automatically canceled.

Enlarging recorded images – Tape PB ZOOM

You can enlarge moving and still images recorded on tapes.
Besides the operation described here, your camcorder can enlarge still images recorded on "Memory Stick"s (DCR-TRV340 only) (p. 164).

(1) In the playback or playback pause mode, press PB ZOOM. The image is enlarged, and ↑↓ indicators which showing the direction to move the image appear on the screen.
(2) Turn SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
↑ : The image moves downwards.
↓ : The image moves upwards.
(3) Turn SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
← : The image moves rightward (Turn the dial downwards.)
→ : The image moves leftward (Turn the dial upwards.)
(4) For DCR-TRV340 only:
Adjust the zoom ratio by the power zoom lever.
You can enlarge the image from 1.1 times up to five times its size.
W : Decreases the zoom ratio.
T : Increase the zoom ratio.



To cancel the PB ZOOM function

Press PB ZOOM to turn off the indicator.

Enlarging recorded images – Tape PB ZOOM

Notes

- The PB ZOOM function works only for tapes recorded in the Digital8 system.
- You cannot process externally input scenes using the PB ZOOM function.
- You cannot record images on a tape on your camcorder when you have processed the image using the PB ZOOM function. However, you can record images on a "Memory Stick" (DCR-TRV340 only) (p. 133), or on a VCR using your camcorder as a player.

Images in the PB ZOOM function

Images in the PB ZOOM function are not output through the DV IN / OUT jack.

PB ZOOM function is automatically canceled when:

– The POWER switch is set to OFF (CHG)
– You stop playing back
– You press MENU
– You press TITLE
– You insert a "Memory Stick" (DCR-TRV340 only)

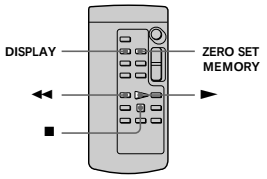
To record an image processed by Tape PB ZOOM on "Memory Stick"s (DCR-TRV340 only)

Press PHOTO to record the image processed by Tape PB ZOOM.

Quickly locating a scene – ZERO SET MEMORY

Your camcorder goes forward or backward to automatically stop at a desired scene having a tape counter value of "0:00:00".
Use the Remote Commander for this operation.
Use this function, for example, to view a desired scene later on during playback.

(1) In the playback mode, press DISPLAY.
(2) Press ZERO SET MEMORY at the point you want to locate later. The tape counter shows "0:00:00" and the ZERO SET MEMORY indicator flashes on the screen.
(3) Press ■ when you want to stop playback.
(4) Press ◀◀ to rewind the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero. The ZERO SET MEMORY indicator disappears, and the time code appears.
(5) Press ►. Playback starts from the counter's zero point.

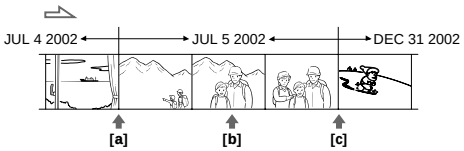


Notes
- The zero set memory function works only for tapes recorded in the Digital8 system.
- When you press ZERO SET MEMORY before rewinding the tape, the zero set memory function is canceled.
- There may be a discrepancy of several seconds from the time code.

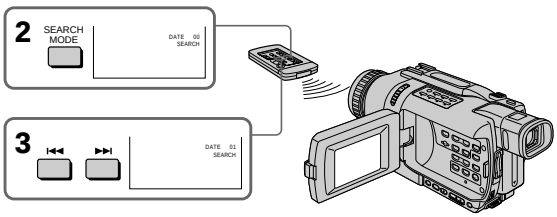
If a tape has a blank portion between recorded portions
The zero set memory function may not work correctly.

Searching a recording by date – DATE SEARCH

You can automatically search for the point where the recording date changes and start playback from that point **(date search)**.
Use the Remote Commander for this operation.
Use this function to check where recording dates change or to edit the tape at each recording date.



(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears on the screen. The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) When the current position is **[b]**, press I◀◀ to search towards **[a]** or press ▶▶I to search towards **[c]**. Your camcorder automatically starts playback at the point where the date changes.
Each time you press I◀◀ or ▶▶I your camcorder searches for the previous or next date.



To stop searching
Press ■.

Notes
- The date search function works only for tapes recorded in the Digital8 system.
- If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

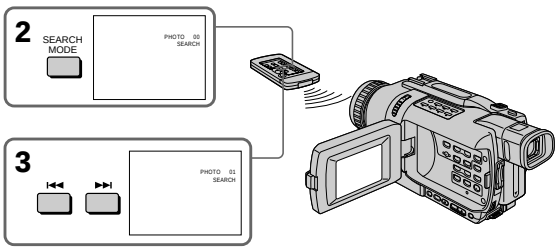
If a tape has a blank portion between recorded portions
The date search function may not work correctly.

Searching for a photo – PHOTO SEARCH/PHOTO SCAN

You can search for the recorded still image recorded on tape **(photo search)**.
You can also search for still images one after another and display each image for five seconds automatically **(photo scan)**.
Use the Remote Commander for these operations.

Searching for a photo

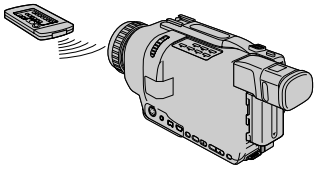
(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the photo search indicator appears on the screen. The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) Press I◀◀ or ▶▶I to select the photo for playback. Each time you press I◀◀ or ▶▶I your camcorder searches for the previous or next photo. Your camcorder automatically starts playback from the photo.



To stop searching
Press ■.

Scanning photo

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the photo scan indicator appears on the screen.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) Press I◀◀ or ▶▶I.
Each photo is played back for about five seconds automatically.



To stop scanning
Press ■.

Note
The photo search and photo scan functions work only for tapes recorded in the Digital8 system.

If a tape has a blank portion between recorded portions
The photo search / photo scan function may not work correctly.

— Editing —

Dubbing a tape

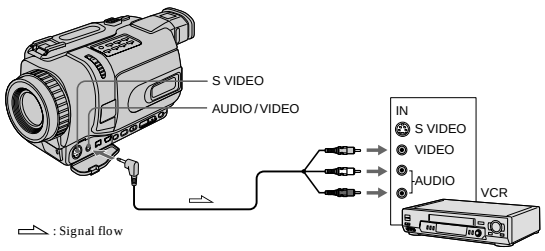
Using the A/V connecting cable

You can dub or edit on the VCR connected to your camcorder using your camcorder as a player.
Connect your camcorder to the VCR using the A / V connecting cable supplied with your camcorder.

Before operation

- Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)
- Press the following buttons to make the indicators disappear so that they will not be superimposed on the edited tape:
  – DISPLAY
  – DATA CODE on the Remote Commander
  – SEARCH MODE on the Remote Commander

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Prepare the VCR for recording, then set the input selector to LINE.
Connect the A / V connecting cable to the AUDIO / VIDEO jack. Refer to the operating instructions of your VCR.
(3) Set the POWER switch to VCR on your camcorder.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR.
Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

You can edit on VCRs that support the following systems:
8 mm, Hi8 Hi8, VHS VHS, S-VHS S-VHS, VHSC VHSC, S-VHSC S-VHSC, Betamax, ED Beta ED Betamax, mini DV, DV or Digital8

Dubbing a tape

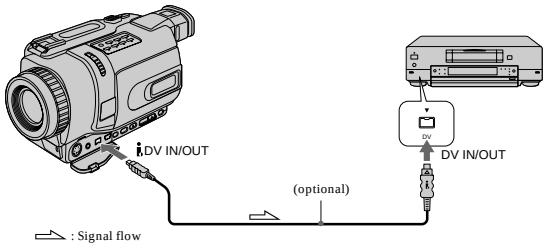
If your VCR is a monaural type
Connect the yellow plug of the A / V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

If your VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A / V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the VCR.

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to DV IN / OUT on your camcorder and to DV IN / OUT on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the screen indicators.

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the input selector on the VCR to DV IN if it is available. Refer to the operating instructions of your VCR.
(3) Set the POWER switch to VCR on your camcorder.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR.
Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Dubbing a tape

Note on tapes that are not recorded in the Digital8 system
The picture may fluctuate. This is not a malfunction.

During playback of tapes recorded in the Hi8/standard 8 system
Digital signals are output as the image signals from the DV IN / OUT jack.

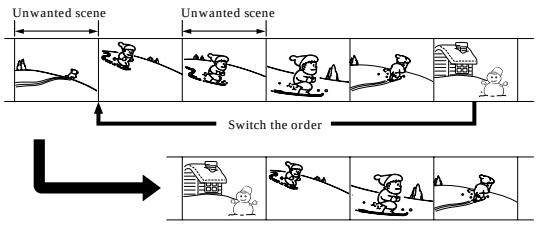
You can connect one VCR only using the i.LINK cable (DV connecting cable)
See page 189 for more information about i.LINK.

Pictures processed by picture effects, digital effects or the PB ZOOM function
Pictures processed by picture effects, digital effects or the PB ZOOM function are not output through the DV IN / OUT jack.

If you record playback pause picture with the DV IN/OUT jack
The recorded picture becomes rough. Also, when you play back the picture using other video equipment, the picture may jitter.

Dubbing only desired scenes – Digital program editing (on tapes)

You can duplicate selected scenes (programs) for editing onto a tape without operating the VCR.
Scenes can be selected by frame. You can set up to 20 programs.
Your camcorder can dub on "Memory Stick"s (DCR-TRV340 only). See page 144 for more information.



Before operating the Digital program editing function on tapes recorded other equipment

Step 1 Connecting the VCR (p. 74).
Step 2 Setting the VCR for operation (p. 74, 79).
Step 3 Adjusting the synchronization of the VCR (p. 81).
When you dub using the same VCR again, you can skip steps 2 and 3.

Using the Digital program editing function on tapes recorded other equipment

Operation 1 Making a program (p. 83).
Operation 2 Performing the program (dubbing a tape) (p. 86).

Notes

- The Digital program editing works only for tapes recorded in the Digital8 system.
- When you connect with an i.LINK cable (DV connecting cable), you may not be able to operate the dubbing function correctly, depending on the VCR. Set CONTROL to IR in the menu settings of your camcorder.
- When editing digital video, the operation signals cannot be sent with LANC.

Step 1: Connecting the VCR

You can connect both an A / V connecting cable and an i.LINK cable (DV connecting cable).
When you use the A / V connecting cable, connect the devices as illustrated in page 70.
When you use an i.LINK cable (DV connecting cable), connect the devices as illustrated on page 71.

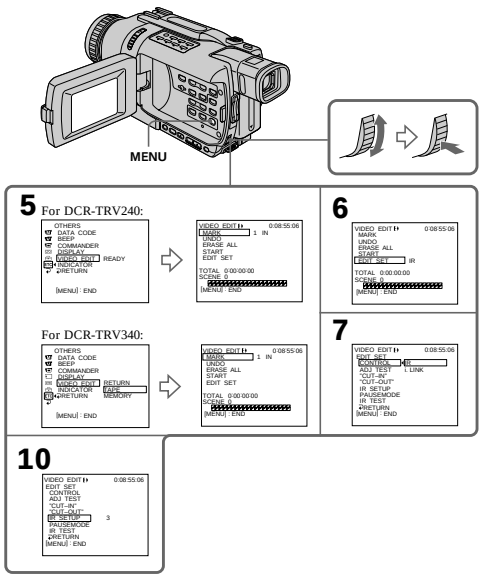
If you connect using an i.LINK cable (DV connecting cable)
With a digital-to-digital connection, video and audio signals are transmitted in digital format for high-quality editing.

Step 2: Setting the VCR to operate with the A/V connecting cable

To edit using the VCR, send the control signal by infrared rays to the remote sensor on the VCR.
When you connect using an A / V connecting cable, follow the procedure below, steps **(1)** to **(4)**, to send the control signal correctly.

(1) Set the IR SETUP code

① Set the POWER switch to VCR on your camcorder.
② Turn the power of the connected VCR on, then set the input selector to LINE.
When you connect a video camera recorder, set its power switch to VCR / VTR.
③ Press MENU to display the menu settings.
④ Turn the SEL / PUSH EXEC dial to select ETC, then press the dial.
⑤ For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL / PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
⑥ Turn the SEL / PUSH EXEC dial to select EDIT SET, then press the dial.
⑦ Turn the SEL / PUSH EXEC dial to select CONTROL, then press the dial.
⑧ Turn the SEL / PUSH EXEC dial to select IR, then press the dial.
⑨ Turn the SEL / PUSH EXEC dial to select IR SETUP.
⑩ Turn the SEL / PUSH EXEC dial to select IR SETUP code number of your VCR, then press the dial.
Check the code in "About IR SETUP codes." (p. 76)



About IR SETUP codes
The IR SETUP code is stored in the memory of your camcorder. Be sure to set the correct code to match your VCR. The default setting is code number 3.

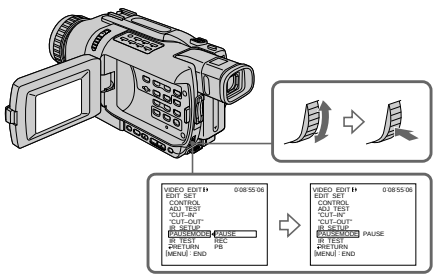
Brand	IR SETUP code
Sony	1, 2, 3, 4, 5, 6
Admiral (M. Wards)	89
Aiwa	47, 54, 80
Akai	49, 51
Audio Dynamic	21, 35
Bell&Howell (M. Wards)	36
Broksonic	21, 70, 82
Canon	77, 78
Citizen	47
Craig	47, 73
Curtis Mathis	8, 77, 80
Daewoo	26, 40, 77
DBX	21, 33, 35
Dimensia	8
Emerson	26, 48, 59, 70, 80, 81, 82
Fisher	36, 37, 44, 45
Funai	80
General Electric	8, 32*, 77, 94*, 101
Goldstar / LG	47
GO VIDEO	71
Hitachi	8, 42, 78
HQ	40
Instant Replay	77, 78
JC Penny	8, 21, 33, 35, 36, 42, 77
JVC	12, 13, 14, 21, 33, 35
Kenwood	21, 33, 35, 47
LXI (Sears)	36, 37, 42, 44, 45, 47, 49, 80
Magnavox	17, 77, 78, 83
Marantz	21, 33, 35
Marta	47
Memorex	37, 77
Minolta	8, 42
Mitsubishi / MGA	22, 23, 24, 28, 29
Multitech	23, 32, 80
NEC	21, 33, 35
Olympic	77, 78
Optimus	22
Orion	60
Panasonic	16, 17, 77, 78
Pentax	8, 42
Philco	26, 70, 77, 78
Philips	47, 77, 78, 83
Pioneer	78
Quasar	6, 16, 17, 77, 78
RCA / PROSCAN	7, 8, 16, 40, 41, 42, 77, 78, 78*, 83, 101
Realistic	22, 36, 37, 77, 80, 88
Sansui	21
Singer	73
Samsung	24, 24*, 32, 32*, 41, 94, 94*
Sanyo	26, 36, 37, 47
Scott	22, 23, 24, 28, 32, 37, 40, 41
Sharp	88, 89
Shintom	73
Signature 2000	80, 89
Sylvania	77, 78, 80, 83
Symphonic	80
Tashiro	47
Tatung	21, 33, 35
Teac	21, 33, 35, 80
Technics	77, 78
Toshiba	7, 40, 49
Wards	37, 47, 88, 89, 95
Yamaha	21, 33, 35, 36
Zenith	95

* TV / VCR component

Note on IR SETUP codes
Digital program editing is not possible if the VCR does not support IR SETUP codes.

(2) Setting the modes to cancel the recording pause on the VCR

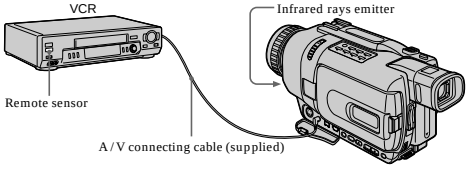
① Turn the SEL / PUSH EXEC dial to select PAUSEMODE, then press the dial.
② Turn the SEL / PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.
Refer to the operating instructions of your VCR.



Buttons to cancel recording pause on the VCR
The buttons vary depending on your VCR. To cancel recording pause:
– Select PAUSE if the button to cancel recording pause is ❚❚.
– Select REC if the button to cancel recording pause is ●.
– Select PB if the button to cancel recording pause is ►.

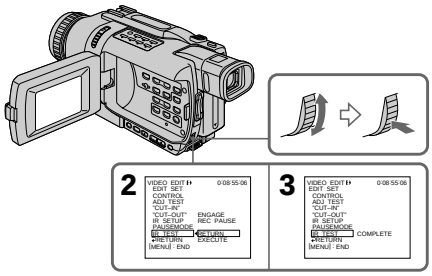
(3) Setting your camcorder and the VCR to face each other

Locate the infrared rays emitter of your camcorder and face it towards the remote sensor of the VCR.
Set the devices about 30 cm (12 in.) apart, and remove any obstacles between the devices.



(4) Confirming VCR operation

① Insert a recordable tape into the VCR, then set to recording pause.
② Turn the SEL / PUSH EXEC dial to select IR TEST, then press the dial.
③ Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
If the VCR starts recording, the setting is correct.
When recording is finished, the indicator changes to COMPLETE.



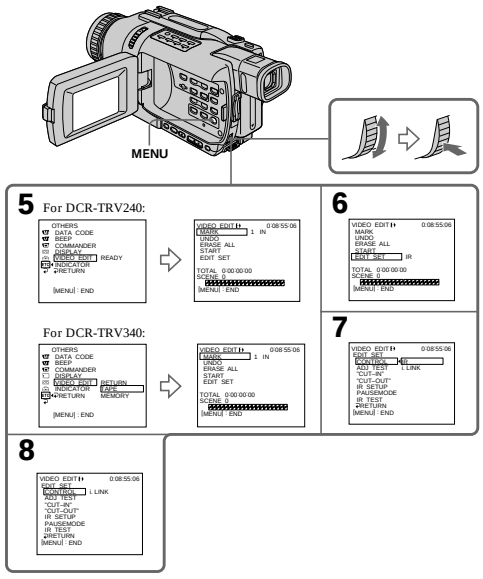
When the VCR does not operate correctly

- After checking the code in "About IR SETUP codes", set the IR SETUP or the PAUSEMODE again.
- Place your camcorder at least 30 cm (12 in.) away from the VCR.
- Refer to the operating instructions of your VCR.

Step 2: Setting the VCR to operate with the i.LINK cable (DV connecting cable)

When you connect using i.LINK cable (DV connecting cable) (optional), follow the procedure below.

(1) Set the POWER switch to VCR on your camcorder.
(2) Turn the power of the connected VCR on, then set the input selector to DV input. When you connect a digital video camera recorder, set its power switch to VCR / VTR.
(3) Press MENU to display the menu settings.
(4) Turn the SEL / PUSH EXEC dial to select ETC, then press the dial.
(5) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL / PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
(6) Turn the SEL / PUSH EXEC dial to select EDIT SET, then press the dial.
(7) Turn the SEL / PUSH EXEC dial to select CONTROL, then press the dial.
(8) Turn the SEL / PUSH EXEC dial to select i.LINK, then press the dial.



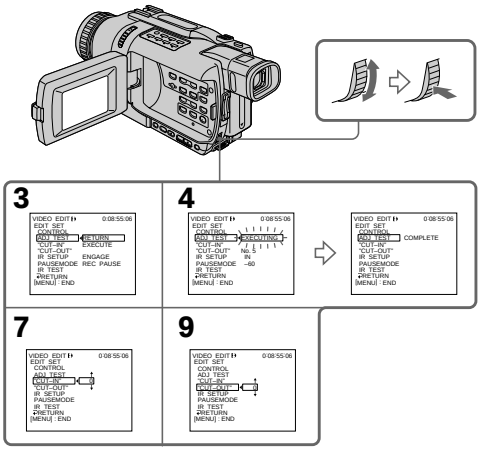
When you connect using an i.LINK cable (DV connecting cable)
You cannot dub the titles and display indicators.

Step 3: Adjusting the synchronization of the VCR

You can adjust the synchronization of your camcorder and the VCR. Have a pen and paper ready for notes. Before operation, eject the cassette from your camcorder if inserted.

(1) Set the POWER switch to VCR on your camcorder.
(2) Insert a blank tape (or a tape you want to record over) into the VCR, then set to recording pause.
When you select i.LINK in CONTROL, you do not need to set to recording pause.
(3) Turn the SEL / PUSH EXEC dial to select ADJ TEST, then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
IN and OUT are recorded on an image for five times each to calculate the number values for adjusting the synchronization.
The EXECUTING indicator flashes on the screen.
When finished, the indicator changes to COMPLETE.
(5) Rewind the tape in the VCR, then start slow playback.
Take a note of the first number value of each IN and the last number value of each OUT.
(6) Calculate the average of all the first number values of each IN, and the average of all the last number values of each OUT.
(7) Turn the SEL / PUSH EXEC dial to select "CUT-IN", then press the dial.
(8) Turn the SEL / PUSH EXEC dial to select the average number value of IN, then press the dial.
The calculated start position for recording is set.
(9) Turn the SEL / PUSH EXEC dial to select "CUT-OUT", then press the dial.
(10) Turn the SEL / PUSH EXEC dial to select the average number value of OUT, then press the dial.
The calculated stop position for recording is set.
(11) Turn the SEL / PUSH EXEC dial to select ↩ RETURN, then press the dial.

Dubbing only desired scenes – Digital program editing (on tapes)



Notes

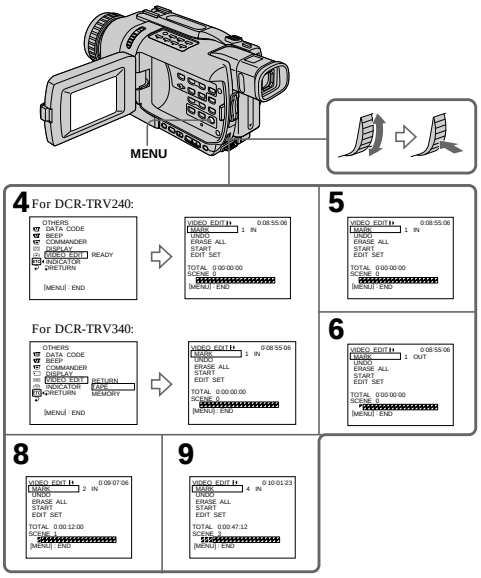
- When you complete step 3, the image used to adjust synchronization is recorded for about 50 seconds.
- If you start recording from the very beginning of the tape, the first few seconds of the tape may not record properly. Be sure to allow about 10 seconds' lead before starting recording.
- When you connect with an i.LINK cable (DV connecting cable) you may not be able to operate the dubbing function correctly, depending on the VCR.
  Keep the i.LINK connection, and set CONTROL to IR in the menu settings.
  Video and audio signals are transmitted in digital format.

Dubbing only desired scenes – Digital program editing (on tapes)

Operation 1: Making a program

(1) Insert the tape for playback into your camcorder, and insert a tape for recording into the VCR.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select ETC, then press the dial.
(4) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL / PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
(5) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.
(6) Press the SEL / PUSH EXEC dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
(7) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
(8) Press the SEL / PUSH EXEC dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
(9) Repeat steps 5 to 8, then set the program.
When the program is set, the program mark changes to light blue.
You can set up to 20 programs.

Dubbing only desired scenes – Digital program editing (on tapes)



Dubbing only desired scenes – Digital program editing (on tapes)

Erasing the program you have set

Erase OUT first and then IN from of the last program.

(1) Turn the SEL / PUSH EXEC dial to select UNDO, then press the dial.
(2) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
The last set program mark flashes, then the setting is canceled.

To cancel erasing
Select RETURN in step 2.

Erasing all programs

(1) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial.
(2) Select ERASE ALL in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
All the program marks flash, then the settings are canceled.

To cancel erasing all programs
Select RETURN in step 2.

To cancel a program you have set
Press MENU.
The program is stored in memory until the tape is ejected.

Notes

- Digital program editing does not work when PB MODE is set to HI8 / 8 in the menu settings.
- You cannot operate recording during Digital program editing.

You cannot set IN or OUT to the following portions of the tape:
– A blank portion of the tape
– A portion recorded in a system other than Digital8

The total time code may not be displayed correctly in the following cases:
– The tape is not recorded in the Digital8 system.
– There is a blank portion between IN and OUT on the tape.

Dubbing only desired scenes – Digital program editing (on tapes)

Operation 2: Performing the program (Dubbing a tape)

Make sure that your camcorder and VCR are connected, and that the VCR is set to recording pause. When you use an i.LINK cable (DV connecting cable), the following procedure is not necessary.
When you use a digital video camera recorder, set its power switch to VCR/VTR.

(1) For DCR-TRV240:
Turn the SEL/PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Select VIDEO EDIT in the menu settings. Turn the SEL/PUSH EXEC dial to select TAPE, then press the dial.
(2) Select START in the menu settings. Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, and the EDITING indicator appears during edit on the screen.
The program mark changes to light blue after dubbing ends.
When dubbing ends, your camcorder and the VCR automatically stop.

To stop dubbing during editing

Press ■ on your camcorder.

To end the Digital program editing function

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to end the Digital program editing function.

You cannot record on the VCR when:
– The cassette has run out of tape.
– The write-protect tab on the cassette is set to lock.
– The IR SETUP code is not correct (when IR is selected).
– The button to cancel recording pause is not correct (when IR is selected).

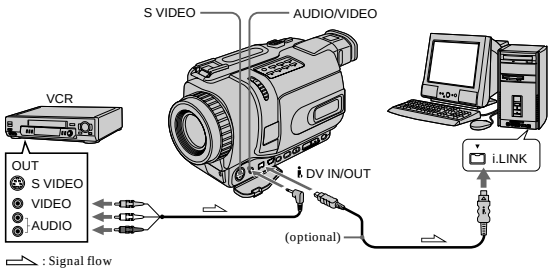
NOT READY appears on the LCD screen when:
– The program to operate Digital program editing has not been made.
– i.LINK is selected but an i.LINK cable (DV connecting cable) is not connected.
– The power of the connected VCR is not turned on (when you set i.LINK).

Capturing images from an analog video unit on your computer – Signal convert function

You can capture images and sound from an analog video unit connected to your computer which has the i.LINK (DV) jack connected to your camcorder.

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Press MENU to display the menu settings.
(3) Turn the SEL/PUSH EXEC dial to set A/V → DV OUT in to ON. (p. 104)
(4) Start playback on the analog video unit.
(5) Start procedures for capturing images and sound on your computer.
The operation procedures depend on your computer and the software you are using.
For details on how to capture images, refer to the operating instructions of your computer and the software you are using.



After capturing images and sound

Stop capturing procedures on your computer, and stop the playback on the analog video unit.

Notes
• You need to install software that supports the exchange video signals.
• Depending on the state of the analog video signals, your computer may not be able to output the images correctly when you convert analog video signals into digital video signals via your camcorder. Depending on the analog video unit, the image may contain noise or incorrect colors.
• You cannot record or capture video output via your camcorder when the video tapes include copyright protection signals such as the ID-2 system.
• You can capture images and sound with an S video cable (optional) instead of the A/V connecting cable (supplied).

If your computer has a USB jack
You can connect your camcorder to your computer using the USB cable supplied with your camcorder. Note, however, that the image may flicker.

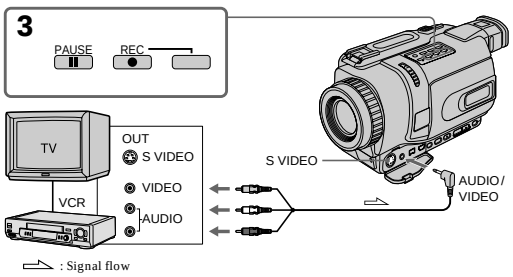
Recording video or TV programs

Using the A/V connecting cable

You can record a tape from another VCR or a TV program from a TV that has video/audio outputs. Use your camcorder as a recorder.

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
(2) Set the POWER switch to VCR on your camcorder.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ► on the VCR to start playback if you are recording a tape from VCR. Select a TV program if you are recording from TV.
The picture from a TV or VCR appears on the screen of your camcorder.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Recording video or TV programs

Notes
• To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8/standard 8 with the Digital8 system on a tape.
• If you fast-forward or slow-playback on the other equipment, the image being recorded may fluctuate. When recording from other equipment, be sure to play back the original tape at normal speed.

If your VCR is a monaural type
Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

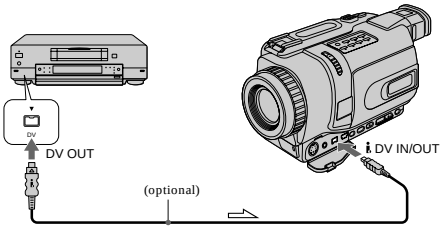
If your TV or VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Recording video or TV programs

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to i DV IN / OUT of your camcorder and to DV OUT of the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

(1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR on your camcorder.
(2) Set the POWER switch to VCR on your camcorder.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ► on the VCR to start playback.
The picture to be recorded appears on the screen of your camcorder.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



: Signal flow

When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

You can connect one VCR only using the i.LINK cable (DV connecting cable).

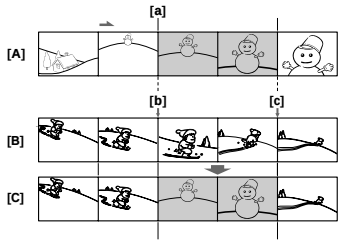
During digital editing
The color of the display may be uneven. However this does not affect the dubbed picture.

If you record playback pause picture with the i DV IN/OUT jack
The recorded picture becomes rough. When you play back the picture using your camcorder, the picture may jitter.

Before recording
Make sure that the DV IN indicator appears on the screen of your camcorder by pressing DISPLAY. The DV IN indicator may appear on both equipment.

Inserting a scene from a VCR – Insert Editing

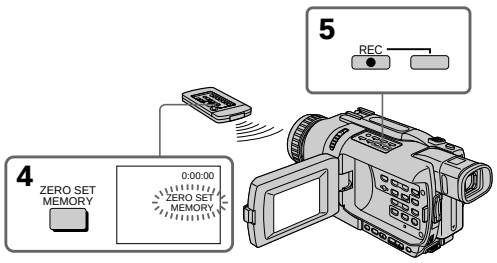
You can insert a new scene from a VCR onto your originally recorded tape by specifying the insert start and end points.
Use the Remote Commander for this operation.
Connections are the same as on page 88, 90. Insert a cassette containing the desired scene to insert into the VCR.



[A]: A tape that contains the scene to be superimposed
[B]: A tape before editing
[C]: A tape after editing

Inserting a scene from a VCR – Insert Editing

(1) Set the POWER switch to VCR on your camcorder.
(2) On the connected VCR, locate just before the insert start point **[a]**, then press ❚❚ to set the VCR to the playback pause mode.
(3) On your camcorder, locate the insert end point **[c]** by pressing ◄◄ or ►►. Then press ❚❚ to set your camcorder to the playback pause mode.
(4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory. The tape counter shows "0:00:00."
(5) On your camcorder, locate the insert start point **[b]** by pressing ◄◄, then press ● REC and the button on its right simultaneously to set your camcorder to the recording pause mode.
(6) First press ❚❚ on the VCR, and after a few seconds press ❚❚ on your camcorder to start inserting the new scene.
Inserting automatically stops near the zero point on the counter. Your camcorder automatically stops. The end point **[c]** of the insert stored in memory is canceled.



To change the insert end point

Press ZERO SET MEMORY again after step 5 to make the ZERO SET MEMORY indicator disappear and begin from step 3.

Notes
• The zero set memory function works only for tapes recorded in the Digital8 system.
• Pictures and sound recorded on the section between the insert start and end points will be erased when you insert the new scene.

When the inserted picture is played back
Pictures may be distorted at the end of the inserted section. This is not a malfunction.

To insert a scene without setting the insert end point
Skip step 3 and 4. Press ■ when you want to stop inserting.

Viewing images recorded on a tape on your computer (Windows users only)

If you connect your camcorder and your computer using the USB cable, you can view pictures live from your camcorder and pictures recorded on a tape on your computer (USB Streaming function).
Furthermore, if you capture images recorded on a tape from your camcorder to your computer, you can process or edit them in image processing software and append them to e-mail.

Connecting with USB cable and viewing images on your computer

• Installing the USB driver (p. 95)
• Installing "PIXELA ImageMixer Ver.1.0 for Sony" (p. 99)
• Capturing images with "PIXELA ImageMixer Ver.1.0 for Sony" (p. 100)

Recommended computer environment

OS:
Microsoft Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional (standard installation)
However, operation is not assured if the above environment is an upgraded OS.
If you are using Windows 98, you cannot capture sounds.
CPU:
Minimum 500 MHz Intel Pentium III or faster (800 MHz or faster recommended)
Application:
DirectX 8.0a or later
Sound system:
16 bit stereo sound card and speakers
Memory:
64 MB or more
Hard disk:
Minimum 200 MB available hard disk space for installation
1 GB hard disk space or more recommended for working area (depending on the file size of editing images)
Display:
4 MB VRAM video card, Minimum 800 × 600 dot Hi color (16 bit color, 65,000 colors), Direct Draw display driver capability (At 800 × 600 dot or less, 256 colors and less, this product will not operate correctly.)
Others:
This product is compatible with DirectX technology, so it is necessary to install DirectX.

The USB connector is provided as standard.

You cannot use this function in the Macintosh environment.

Notes

- Operations are not guaranteed for either the Windows or Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

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All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual.

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.

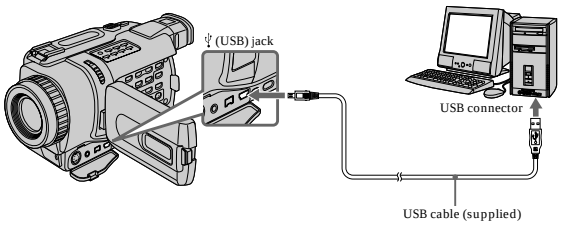
Start the following operation without connecting the USB cable to your computer.
Connect the USB cable in step 8.

If the USB driver has been registered incorrectly because your computer was connected to your camcorder before installation of the USB driver was complete, reinstall the USB driver following the procedure on page 96.

For Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP users
If you are using Windows 2000 Professional or Windows XP, log in with permission of administrator.

(1) Turn on your computer and allow Windows to load.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer. The application software screen appears.
(3) Move the cursor to "USB Driver" and click. This starts USB driver installation.

(4) Follow the on-screen messages to install the USB driver.
(5) Connect the AC power adaptor to your camcorder and then to a wall outlet.
(6) Set the POWER switch to CAMERA or VCR.
(7) Select USB STREAM to ON in in the menu settings (p. 104).
(8) With the CD-ROM inserted, connect the USB jack on your camcorder to the USB connector on your computer using the supplied USB cable.
Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.



(9) Follow the on-screen messages so that the Add Hardware Wizard recognizes that the USB drivers have been installed. The Add Hardware Wizard starts three times because three different USB drivers are installed. Be sure to allow the installation to complete without interrupting it.

If the "Files Needed" screen appears (For Windows 2000 Professional / Windows XP users)
(10) Insert the supplied CD-ROM into the CD-ROM drive of your computer, then select "Browse…" → "My computer" → "ImageMixer" → "sonyhcb.sys", and click the "OK" button.

When the installation is complete, go to "Installing 'PIXELA ImageMixer Ver.1.0 for Sony'" on page 99.

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Step 1: Uninstall the incorrect USB driver

① Turn on your computer and allow Windows to load.
② Connect the USB connector on your computer to the (USB) jack on your camcorder using the USB cable supplied with your camcorder.
③ Connect the AC power adaptor, and set the POWER switch to CAMERA or VCR.

④ Open your computer's "Device Manager".

For Windows XP:
Select "Start" → "Control Panel" → "System" → "Hardware" tab, and click the "Device Manager" button.
If there is no "System" inside "Pick a Category" after clicking "Control Panel", click "Switch to Classic View" instead.

For Windows 2000 Professional:
Select "My Computer" → "Control Panel" → "System" → "Hardware" tab, and click the "Device Manager" button.

For Windows 98SE / Windows Me:
Select "My Computer" → "Control Panel" → "System", and click the "Device Manager" button.

⑤ Select and delete the underlined devices below.

Windows 98SE

Windows Me

Windows 2000 Professional

Windows XP

⑥ Set the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
⑦ Restart your computer.

Step 2: Install the USB driver on the CD-ROM

Perform the entire procedure described in “Installing the USB driver” on page 95.

Installing “PIXELA ImageMixer Ver.1.0 for Sony”

Install “PIXELA ImageMixer Ver.1.0 for Sony” on your computer. “PIXELA ImageMixer Ver.1.0 for Sony” is packaged on the CD-ROM supplied with your camcorder. “PIXELA ImageMixer Ver.1.0 for Sony” allows you to easily view images on your camcorder on your computer for your enjoyment.

To install and use this software in Windows 2000 Professional, you must be authorized as a Power User or Administrator. For Windows XP, you must be authorized as an Administrator.

(1) Turn on your computer and allow Windows to load.
If you are using your computer, close all running applications.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software screen appears. If the application software screen does not appear, double-click “My Computer” and then “ImageMixer” (CD-ROM Drive). The application software screen appears after a while.

(3) Move the cursor to “PIXELA ImageMixer” and click.
The language selection dialog box appears.
(4) Select the language for installation.
(5) Follow the on-screen messages.

Follow the directions on the screen to install DirectX. DirectX 8.0 will be installed.

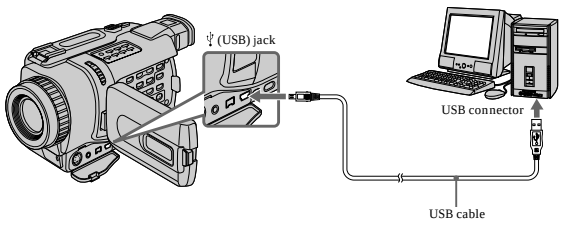
Capturing images with “PIXELA ImageMixer Ver.1.0 for Sony”

To use this software in Windows 2000 Professional, you must be authorized as a Power User or Administrator. For Windows XP, you must be authorized as an Administrator.

Viewing images

Viewing images recorded on a tape

(1) Turn on your computer and allow Windows to load.
(2) Connect one end of the USB cable to the ψ (USB) jack on your camcorder and the other end to the USB connector on your computer.

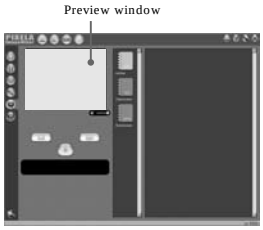


(3) Connect the AC power adaptor to your camcorder and then to a wall outlet, and insert a cassette into your camcorder.
(4) Set the POWER switch to VCR.
Select USB STREAM to ON in ⊡ in the menu settings (p. 104).
(5) Select “Start” → “Program” → “PIXELA” → “ImageMixer” → “ImageMixer Ver.1.0 for Sony” on Windows.

(6) Click ⓘ on the screen.

The “PIXELA ImageMixer Ver.1.0 for Sony” startup screen appears on your computer.

(7) Click USB.



(8) Start playback on your camcorder.
The image from the tape appears in the preview window.

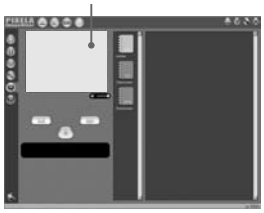
Viewing images recorded on a tape on your computer (Windows users only)

Viewing images live from your camcorder

(1) Follow the steps (1), (2) on page 100, then connect the AC power adaptor to your camcorder and then to a wall outlet.
(2) Set the POWER switch to CAMERA.
Select USB STREAM to ON in in the menu settings (p. 104).
(3) Follow the steps (5) to (7) on page 100, 101.
The image from your camcorder appears live in the preview window.

Capturing images

Preview window



Capturing still images

(1) Click .
(2) Click at the point to capture using the preview window. The captured image appears on the thumbnail list window.

Capturing moving pictures

(1) Click .
(2) Click at the start point to capture using the preview window.
The changes to . Then click at the stop point to capture. The captured image appears on the thumbnail list window.

Viewing images recorded on a tape on your computer (Windows users only)

Notes

- When you view the image using your computer with USB connection, the image may fluctuate.
- When your camcorder is in the standby mode with a cassette inserted, it turns off automatically after three minutes.
- We recommend setting DEMO MODE to OFF in the menu settings when your camcorder is in the standby mode, and no cassette is inserted.
- Indicators in the camcorder LCD screen do not appear on images that are captured into your computer.

If image data cannot be transferred by the USB connection

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 96.

If any trouble occurs

Close all running applications, then restart it.

Carry out the following operations after quitting the application:

– Disconnect the USB cable
– Turn on / off your camcorder.

Seeing the on-line help (operating instructions) of "PIXELA ImageMixer Ver.1.0 for Sony"

"PIXELA ImageMixer Ver.1.0 for Sony" is provided with on-line help (operating instructions).

(1) Click ⓘ button located in the upper-right corner of the screen.
The ImageMixer's Manual screen appears.
(2) You can access the desired topics from the contents.

To close on-line help

Click ☒ located in the upper-right corner of the "ImageMixer's Manual" screen.

If you have any questions about "PIXELA ImageMixer Ver.1.0 for Sony"

"ImageMixer Ver.1.0 for Sony" is a trademark of PIXELA corporation. Refer to the information web site at: "http: / / www.imagemixer.com".

Notes on using your computer

Communications with your computer

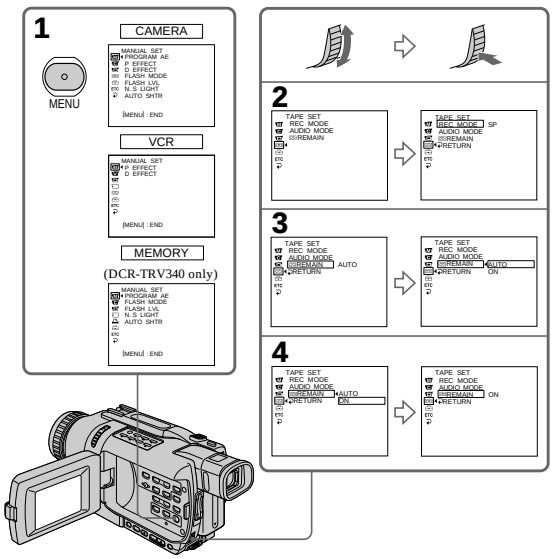
Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

Changing the menu settings

To change the mode settings in the menu settings, select the menu items with the SEL / PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

(1) In CAMERA, VCR or MEMORY (DCR-TRV340 only) mode, press MENU to display the menu settings.
(2) Turn the SEL / PUSH EXEC dial to select the desired icon, then press the dial to set.
(3) Turn the SEL / PUSH EXEC dial to select the desired item, then press the dial to set.
(4) Turn the SEL / PUSH EXEC dial to select the desired mode, and press the dial to set.
(5) If you want to change other items, select RETURN and press the dial, then repeat steps from 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 105).



Changing the menu settings

To make the menu display disappear

Press MENU.

Menu items are displayed as the following icons:

- MANUAL SET
- CAMERA SET
- VCR SET
- LCD / VF SET
- MEMORY SET (DCR-TRV340 only)
- PRINT SET (DCR-TRV340 only)
- TAPE SET
- SETUP MENU
- OTHERS

Selecting the mode setting of each item

● is the default setting.

Menu items differ depending on the position of the POWER switch.
The screen shows only the items you can operate at the moment.

Icon/item	Mode	Meaning	POWER switch
PROGRAM AE	—	To suit your specific shooting requirement (p. 50)	CAMERA MEMORY
P EFFECT	—	To add special effects like those in films or on the TV to images (p. 46, 62)	CAMERA VCR
D EFFECT	—	To add special effects using the various digital functions (p. 47, 63)	CAMERA VCR
FLASH MODE	● ON	To fire the flash (optional) regardless of the brightness of the surroundings	CAMERA MEMORY
	AUTO	The flash fires automatically.	
	AUTO 👁	To fire the flash before recording to reduce the red-eye	
FLASH LVL	HIGH	Makes the flash level higher than normal.	CAMERA MEMORY
	● NORMAL	Normal setting	
	LOW	Makes the flash level lower than normal.	
N.S. LIGHT	● ON	To use the NightShot Light function (p. 28)	CAMERA MEMORY
	OFF	To cancel the NightShot Light function	
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions	CAMERA MEMORY
	OFF	To not automatically activate the electronic shutter even when shooting in bright conditions	

Notes on FLASH MODE and FLASH LVL

- You cannot adjust FLASH MODE or FLASH LVL if the flash (optional) is not compatible with FLASH MODE or FLASH LVL.
- FLASH MODE and FLASH LVL are displayed only when an external flash (optional) is connected to the intelligent accessory shoe.

(continued on the following page)

Changing the menu settings

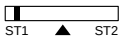
Icon/item	Mode	Meaning	POWER switch
SELFTIMER*	● OFF	To not use the self-timer function	CAMERA MEMORY
	ON	To use the self-timer function	
D ZOOM	● OFF	To deactivate the digital zoom. Up to 25× zoom is performed.	CAMERA MEMORY
	50×	To activate the digital zoom. More than 25× to 50× zoom is performed digitally (p. 23).	
	700×	To activate the digital zoom. More than 25× to 700× zoom is performed digitally (p. 23).	
PHOTO REC*	● MEMORY	To record still images on "Memory Stick"s in CAMERA mode while you are in the standby mode or recording moving pictures to tape by pressing PHOTO (p. 122)	CAMERA
	TAPE	To record still images on tape in CAMERA mode while you are in the standby mode or recording moving pictures to tape by pressing PHOTO (p. 38)	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 41)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA MEMORY
	OFF	To cancel the SteadyShot function. Natural pictures are produced when shooting a stationary object with a tripod.	
FRAME REC	● OFF	To deactivate the frame recording	CAMERA
	ON	To activate the frame recording (p. 56)	
INT. REC	ON	To activate the interval recording function (p. 54)	CAMERA
	● OFF	To deactivate the interval recording function	
	SET	To set INTERVAL and REC TIME for interval recording	

* DCR-TRV340 only

Notes on the SteadyShot function
- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot function.

If you cancel the SteadyShot function
The SteadyShot off indicator appears on the screen. Your camcorder prevents excessive compensation for camera-shake.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
HiFi SOUND	● STEREO	To play back a stereo tape or dual sound track tape with main and sub sound (p. 186)	VCR
	1	To play back a stereo tape with the left sound or a dual sound track tape with main sound	
	2	To play back a stereo tape with the right sound or a dual sound track tape with sub sound	
TBC*	● ON	To correct jitter	VCR
	OFF	To not correct jitter. Set TBC to OFF when playing back a tape on which you have dubbed over and recorded the signal of a TV game or similar machine.	
TBC stands for "Time Base Corrector".			
DNR*	● ON	To reduce picture noise	VCR
	OFF	To reduce a conspicuous afterimage when the picture has a lot of movement	
DNR stands for "Digital Noise Reduction".			
AUDIO MIX	—	To adjust the balance between the stereo 1 and stereo 2 	VCR
A/V → DV OUT	● OFF	To output digital images and sound in analog format using your camcorder	VCR
	ON	To output analog images and sound in digital format using your camcorder (p. 87)	
PB MODE	● AUTO	To automatically select the system (Hi8/standard 8 or Digital8) that was used to record on the tape, and play back the tape	VCR
	Hi8/8	To play back a tape that was recorded in the Hi8/standard 8 system when your camcorder does not automatically distinguish the recording system	

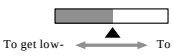
* When you play back tapes recorded in the Hi8/standard 8 system only

Notes on AUDIO MIX
- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance.
- You can adjust the balance only for tapes recorded in the Digital8 system.

Note on PB MODE
The mode will return to the default setting when:
– you remove the battery pack or power source.
– you turn the POWER switch.

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
LCD BRIGHT	—	To adjust the brightness on the LCD screen with the SEL/PUSH EXEC dial.	CAMERA VCR MEMORY
LCD B. L.	● BRT NORMAL	To set the brightness on the LCD screen to normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the LCD screen	
LCD COLOR	—	To adjust the color on the LCD screen, turning the SEL/PUSH EXEC dial to adjust the following bar 	CAMERA VCR MEMORY
VF B.L.	● BRT NORMAL	To set the brightness on the viewfinder screen to normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the viewfinder screen	

Notes on LCD B.L. and VF B.L.
- When you select BRIGHT, battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, BRIGHT is automatically selected.

Even if you adjust LCD BRIGHT, LCD B.L., LCD COLOR and/or VF B.L.
The recorded picture will not be affected.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
* STILL SET			
PIC MODE	● SINGLE	To not record continuously	MEMORY
	MULTI SCRN	To record nine images continuously, display the images on a single page divided into nine boxes.	
QUALITY	● FINE	To record still images in the fine image quality mode (p. 118)	VCR MEMORY
	STANDARD	To record still images in the standard image quality mode	
FLD/FRAME	● FIELD	To record moving subjects correcting jitter (p. 122)	MEMORY
	FRAME	To record stopping subjects in high quality	
MOVIE SET			
IMAGESIZE	● 320 × 240	To record moving pictures at 320 × 240 size (p. 120)	VCR MEMORY
	160 × 112	To record moving pictures at 160 × 112 size	
REMAIN	● AUTO	To display the remaining capacity of the "Memory Stick" in the following cases: • For five seconds after inserting a "Memory Stick" into your camcorder • When the capacity of the "Memory Stick" is less than one minute in MEMORY mode • For five seconds after completing a moving picture recording	VCR MEMORY
	ON	To always display the remaining capacity of the "Memory Stick"	
PRINT MARK	ON	To write a print mark on recorded still images you want to print out later (p. 172)	VCR MEMORY
	● OFF	To cancel print marks on still images	
PROTECT	ON	To protect selected images against accidental erasure (p. 168)	VCR MEMORY
	● OFF	To not protect images	
SLIDE SHOW	——	To play back images in a continuous loop (p. 166)	MEMORY
PHOTO SAVE	——	To copy still images on tape onto "Memory Stick" (p. 136)	VCR
FILE NO.	● SERIES	To assign numbers to file in sequence even if the "Memory Stick" is changed	VCR MEMORY
	RESET	To reset the file numbering each time the "Memory Stick" is changed	

* DCR-TRV340 only

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
* DELETE ALL	● RETURN	To cancel deleting all images	MEMORY
	OK	To delete all unprotected images	
FORMAT	● RETURN	To cancel formatting	MEMORY
	OK	To format an inserted "Memory Stick" 1. Select FORMAT with the SEL / PUSH EXEL dial, then press the dial. 2. Select OK with the SEL / PUSH EXEC dial, then press the dial. 3. After EXECUTE appears, press the SEL / PUSH EXEC dial. FORMATTING flashes during formatting. COMPLETE appears when formatting is finished.	
* 9PIC PRINT	● RETURN	To cancel prints of split screens	MEMORY
	SAME	To make prints of the same split screen (p. 174)	
	MULTI	To make prints of different split screens	
	MARKED	To make prints of images with print marks in recording order	
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY
	DATE	To make prints with the recording date	
	DAY&TIME	To make prints with the recording date and time (p. 174)	

Notes on formatting *
- Supplied "Memory Stick"s have been formatted at factory. Formatting "Memory Stick"s on your camcorder is not required.
- Do not turn the POWER switch or press any button while the display shows FORMATTING.
- You cannot format the "Memory Stick" if the write-protect tab on the "Memory Stick" is set to LOCK.
- Format the "Memory Stick" when "FORMAT ERROR" is displayed.

Formatting erases all information on the "Memory Stick" *
Check the contents of the "Memory Stick" before formatting.
- Formatting erases sample images on the "Memory Stick."
- Formatting erases protected image data on the "Memory Stick."

Note on PRINT SET *
9PIC PRINT and DATE / TIME are displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

* DCR-TRV340 only

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
REC MODE	● SP	To record in the SP (Standard Play) mode	CAMERA VCR
	LP	To increase the recording time to 1.5 times the SP mode	
AUDIO MODE	● 12BIT	To record in the 12-bit mode (two stereo sounds)	CAMERA VCR*
	16BIT	To record in the 16-bit mode (one stereo sound with high quality)	
REMAIN	● AUTO	To display the remaining tape bar: • For about eight seconds after your camcorder is turned on and calculates the remaining amount of tape • For about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • For about eight seconds after ► is pressed in VCR mode • For about eight seconds after DISPLAY is pressed to display the screen indicators • For the period of tape rewinding, forwarding or picture search in VCR mode	CAMERA VCR
	ON	To always display the remaining tape bar	

Notes on the LP mode
- When you record a tape in the LP mode on your camcorder, we recommend playing back the tape on your camcorder. When you play back the tape on other camcorders or VCRs, noise may occur in pictures or sound.
- When you record in the LP mode, we recommend using a Sony cassette so that you can get the most out of your camcorder.
- When you record in the SP and LP modes on one tape or you record some scenes in the LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.

Note on AUDIO MODE
When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

***To dub a tape to another VCR**
You cannot select AUDIO MODE for tapes recorded in the Digital8 system. You, however, can select AUDIO MODE when you dub tapes recorded in the Hi8 / standard 8 system to another VCR using the i.LINK cable.

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
CLOCK SET	—	To set the date or time (p. 17)	CAMERA MEMORY
USB STREAM	● OFF	To deactivate the USB Streaming function	CAMERA VCR
	ON	To activate the USB Streaming function	
LTR SIZE	● NORMAL	To display selected menu items in normal size	CAMERA VCR MEMORY
	2×	To display selected menu items at twice the normal size	
LANGUAGE	● ENGLISH	To display the following information indicators in English: REC, STBY, min, CAPTURE, END SEARCH and VOL, etc.	CAMERA VCR MEMORY
	FRANÇAIS	To display the information indicators in French	
	ESPAÑOL	To display the information indicators in Spanish	
	PORTUGUÊS	To display the information indicators in Portuguese	
	中文	To display the information indicators in Chinese	
	한국어	To display the information indicators in Korean	
DEMO MODE	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration mode	

Notes on DEMO MODE
- You cannot select DEMO MODE when a cassette is inserted in your camcorder.
- The DEMO MODE default setting is STBY (Standby), and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette inserted.
  To cancel the demonstration, insert a cassette, set the POWER switch to other than CAMERA, or set DEMO MODE to OFF. To set to STBY (Standby) again, leave the DEMO MODE at ON in the menu settings, turn the POWER switch to OFF (CHG), and return the POWER switch to CAMERA.
- When NIGHTSHOT is set to ON, the "NIGHTSHOT" indicator appears on the screen and you cannot select DEMO MODE in the menu settings.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
DATA CODE	● DATE / CAM	To display date, time and recording data during playback	VCR MEMORY
	DATE	To display date and time during playback	
WORLD TIME	—	To set the clock to the local time Turn the SEL / PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
BEEP	● MELODY	To output the melody when you start / stop recording or when an unusual condition occurs on your camcorder	CAMERA VCR MEMORY
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel all sound including shutter sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	CAMERA VCR MEMORY
	OFF	To deactivate the Remote Commander to avoid erroneous remote control operation caused by other VCR's remote control	
DISPLAY	● LCD	To show the display on the LCD screen and in the viewfinder	CAMERA VCR MEMORY
	V-OUT / LCD	To show the display on the TV screen, LCD screen and in the viewfinder	

Note
If you press DISPLAY with DISPLAY set to V-OUT / LCD in the menu settings, the picture from a TV or VCR will not appear on the screen even when your camcorder is connected to outputs on the TV or VCR. (Except when your camcorder is connected with the i.LINK cable)

In more than five minutes after removing the power source
The AUDIO MIX, FLASH LVL, COMMANDER and HiFi SOUND settings are returned to their default settings.
Other menu settings are held in memory even when the battery is removed.

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
ETC REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that the person is not aware of the recording	
VIDEO EDIT	● RETURN*	To cancel video editing	VCR
	TAPE*	To make a program and perform video editing (p. 73)	
	MEMORY*	To make a program and perform MPEG editing (p. 144)	
INDICATOR	● BL OFF	To turn off the backlight on display window	CAMERA VCR MEMORY
	BL ON	To turn on the backlight on display window	

* DCR-TRV340 only

When recording a close subject
When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend that you set REC LAMP to OFF.

Notes on INDICATOR
- When you select BL ON, battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, BL ON is automatically selected.

Using "Memory Stick"– Introduction

– DCR-TRV340 only
You can record and play back images on a "Memory Stick" supplied with your camcorder. You can easily play back, record or delete images. You can exchange image data with other equipment such as your computer etc., using the USB cable for "Memory Stick" supplied with your camcorder.

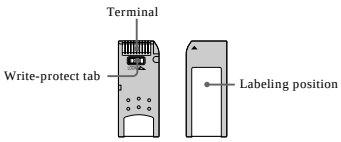
On file format

Still image (JPEG)
Your camcorder compresses image data in JPEG format (extension .jpg).
Moving picture (MPEG)
Your camcorder compresses picture data in MPEG format (extension .mpg).

Typical image data file name
Still image
100-0001: This file name appears on the screen of your camcorder.
Dsc00001.jpg: This file name appears on the display of your computer.

Moving picture
MOV00001: This file name appears on the screen of your camcorder.
Mov00001.mpg: This file name appears on the display of your computer.

Using a "Memory Stick"



- You cannot record or erase images when the write-protect tab on the "Memory Stick" is set to LOCK.
- The position and shape of the write-protect tab may be different depending on the model.
- We recommend backing up important data on the hard disk of your computer.
- Image data may be damaged in the following cases:
  – If you remove the "Memory Stick" or turn the power off during reading or writing.
  – If you use "Memory Stick"s near static electricity or magnetic fields.
- Prevent metallic objects or your finger from coming into contact with the metal parts of the terminal.
- Stick the label at the labeling position.
- Do not bend, drop or apply strong shock to "Memory Stick"s.
- Do not disassemble or modify "Memory Stick"s.
- Do not let "Memory Stick"s become wet.
- Do not use or keep "Memory Stick"s in locations that are:
  – Extremely hot such as in a car parked in the sun or under the scorching sun
  – Under direct sunlight
  – Very humid or subject to corrosive gases
- When you carry or store a "Memory Stick," put it in its case.

"Memory Stick"s formatted on computer
"Memory Stick"s formatted on Windows OS or Macintosh computers are not guaranteed compatible with your camcorder.

Notes on image data compatibility
- Image data files recorded on "Memory Stick"s by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association). You cannot play back on your camcorder still images recorded on other equipment (DCR-TRV890E / TRV900 / TRV900E or DSC-D700 / D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the "Memory Stick" that is used with other equipment, format it with this camcorder (p. 110). However, formatting erases all information on the "Memory Stick."

- "Memory Stick" and MEMORY STICK are trademarks of Sony Corporation.
- Windows and Windows Media are either registered trademarks or trademarks of Microsoft Corporation in the United States and / or other countries.
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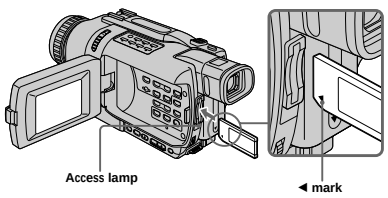
- Pentium is either registered trademark or trademark of Intel Corporation.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.

Furthermore, "™" and "®" are not mentioned in each case in this manual.

Inserting "Memory Stick"

Insert a "Memory Stick" in the "Memory Stick" slot as far as it can go with the ◄ mark facing toward the "Memory Stick" slot as illustrated.



Ejecting the "Memory Stick"

Press the "Memory Stick" once lightly.

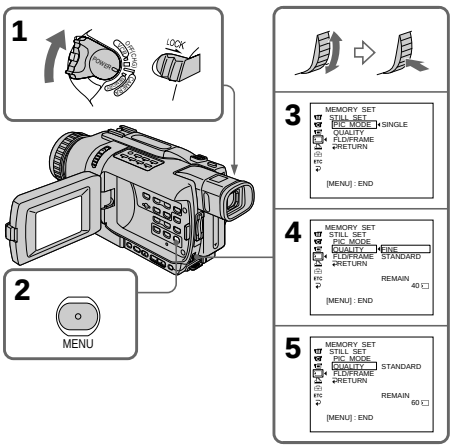
When the access lamp is lit or flashing
Do not shake or knock your camcorder because your camcorder is reading the data from the "Memory Stick" or recording the data on the "Memory Stick". Do not turn the power off , eject the "Memory Stick" or remove the battery pack. Otherwise, image data may become damaged.

If "⚿ MEMORY STICK ERROR" is displayed
Reinsert "Memory Stick" a few times. The "Memory Stick" may be damaged if the indicator is still displayed. If this occurs, use another "Memory Stick."

Selecting the still image quality mode

You can select the image quality mode in still image recording. The default setting is FINE.

(1) Set the POWER switch to VCR or MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select STILL SET in , then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select QUALITY, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select the desired image quality, then press the dial.



Note
In some cases, changing the image quality mode may not affect the image quality, depending on the type of images you are shooting.

Image quality settings

Setting	Meaning
FINE (FINE)	Use this mode when you want to record high quality images. Fine images are compressed to about 1/6.
STANDARD (STD)	This is the standard image quality. Standard images are compressed to about 1/10.

Differences in image quality mode
Recorded images are compressed in JPEG format before being stored into memory. The memory capacity allotted to each image varies depending on the selected image quality mode. Details are shown in the table below. (The number of pixels is 640 × 480, regardless of image quality mode. The data size before compression is about 600 KB.)

Image quality mode	Memory capacity
FINE	About 100 KB
STANDARD	About 60 KB

Image quality mode indicator
The image quality mode indicator is not displayed during playback.

When you select image quality
The number of images you can shoot in the currently selected image quality appears on the screen.

Selecting the moving image size

You can select either 320 × 240 or 160 × 112 for moving image sizes.
The default setting is 320 × 240.

(1) Set the POWER switch to VCR or MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select MOVIE SET in , then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select IMAGESIZE, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select the desired image size, then press the dial.
The indicator changes as follows:

320 ⟷ 160

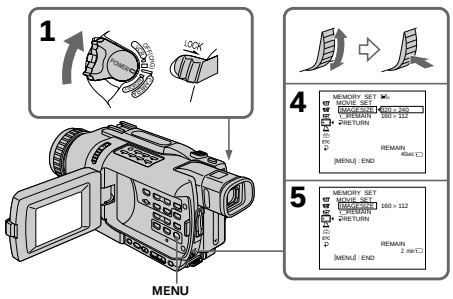


Image size settings

Setting	Meaning	Indicator (Recording/Playback)
320 × 240	Records 320 × 240 moving pictures.	320
160 × 112	Records 160 × 112 moving pictures.	160

Maximum recording time of moving pictures

Image size	Maximum recording time
320 × 240	15 seconds
160 × 112	60 seconds

Approximate number of still images you can record on a "Memory Stick"

The number of images you can record varies depending on which image quality you select and the complexity of the subject.

Image quality	Type of "Memory Stick"s				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
FINE	80 images	160 images	325 images	650 images	1310 images
STANDARD	120 images	240 images	485 images	980 images	1970 images

Approximate time of moving pictures you can record on a "Memory Stick"

The time of moving pictures you can record varies depending on which image size you select and the complexity of the subject.

Image size	Type of "Memory Stick"s				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
160 × 112	5 min. 20 sec.	10 min. 40 sec.	21min. 20 sec.	42min. 40 sec.	85min. 20 sec.
320 × 240	1 min. 20 sec.	2 min. 40 sec.	5 min. 20 sec.	10min. 40 sec.	21min. 20 sec.

The table above shows approximate number of still images and times of moving pictures you can record on a "Memory Stick" formatted on your camcorder.

Recording still images on "Memory Stick"s – Memory Photo recording

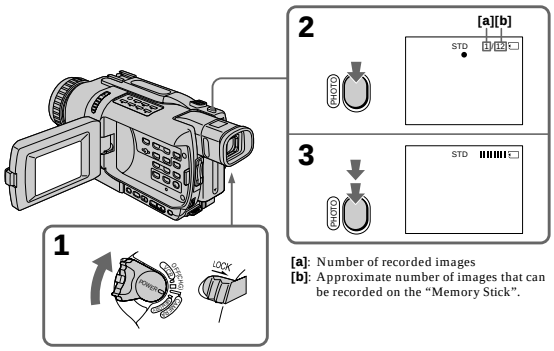
– DCR-TRV340 only

You can select the FIELD or FRAME mode in still image recording. Your camcorder compensates for camera-shake when recording moving subjects in the FIELD mode. Your camcorder records still images in high quality in the FRAME mode. Select the FIELD or FRAME in the menu settings (p. 104).

Before operation

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Keep pressing PHOTO lightly until the desired still image appears. The green ● mark stops flashing, then lights up. The brightness of the image and focus are adjusted, being targeted for the middle of the image and are fixed. Recording does not start yet.
(3) Press PHOTO deeper.
Recording is complete when the bar scroll indicator disappears.
The image when you pressed PHOTO deeper will be recorded on the "Memory Stick."



[a]: Number of recorded images
[b]: Approximate number of images that can be recorded on the "Memory Stick".

Recording still images on "Memory Stick"s – Memory Photo recording

Notes

- When recording fast-moving subjects in the FRAME mode, the recorded image blurry.
- When recording in the FRAME mode, your camcorder may not correct camera-shake. We recommend that you shoot objects with a tripod.
- When recording still images at step 2 with PHOTO pressed lightly, the image momentarily flickers. This is not a malfunction.

When the POWER switch is set to MEMORY

The following functions do not work:
– Wide mode
– SUPER NIGHTSHOT
– Color Slow Shutter
– Fader
– Picture effects
– Digital effects
– Titles

When you press PHOTO lightly in step 2

The image momentarily flickers. This is not a malfunction.

While you are recording a still image

You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

Recording data

The recording data (date / time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the "Memory Stick." To display the recording data, press DATA CODE on the Remote Commander during playback.

You can record still images on "Memory Stick"s in CAMERA mode, even while you are in the standby mode or recording moving pictures to tape

Set PHOTO REC to MEMORY in the menu settings before operation. (The default setting is MEMORY.)
Press PHOTO to record still images on "Memory Stick"s in CAMERA mode, while you are standing by for recording or recording moving pictures to tape.

You cannot record still images on "Memory Stick"s in CAMERA mode in the following functions:

– Fader
– Wide mode
– Super NightShot
– Color Slow Shutter
– Picture effects
– Digital effects
– MEMORY MIX

While recording still images on "Memory Stick"s in CAMERA mode

- While the title is displayed, images can be recorded but titles cannot.
- The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording still images on "Memory Stick"s – Memory Photo recording

Recording images continuously

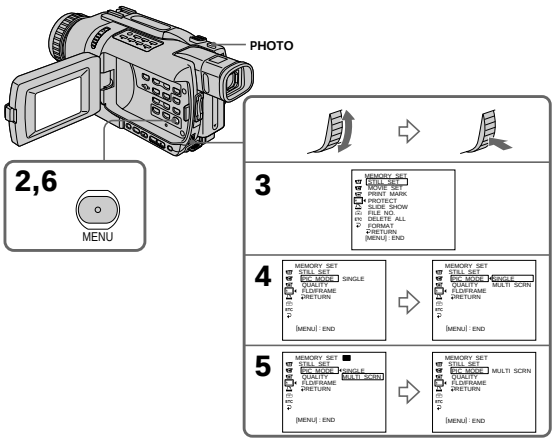
You can record still images continuously.

MULTI SCRN

Your camcorder shoots nine still images at about 0.4 sec intervals and displays the images on a single page divided into nine boxes. ( )

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select STILL SET in , then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select PIC MODE, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select the desired setting, then press the dial.
(6) Press MENU to make the menu settings disappear.
(7) Press PHOTO deeper.

Recording still images on "Memory Stick"s – Memory Photo recording



If the capacity of the "Memory Stick" becomes full

"⊠ FULL" appears on the screen and you cannot record still images on the "Memory Stick".

When recording in the multi screen mode

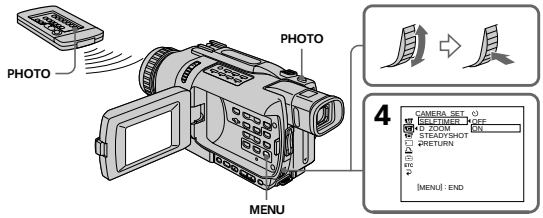
The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording still images on "Memory Stick"s – Memory Photo recording

Self-timer memory photo recording

You can record images on "Memory Stick"s with the self-timer.
You can use the Remote Commander for this operation.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) In the standby mode, press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select SELFTIMER in [self-timer], then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(5) Press MENU to make the menu settings disappear.
(6) Press PHOTO deeper.
Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To record moving pictures on "Memory Stick"s with the self-timer

Press START / STOP in step 6. To cancel recording, press START / STOP again.

To cancel self-timer recording

Set SELFTIMER to OFF in the menu settings while your camcorder is in the standby mode. You cannot cancel self-timer recording with Remote Commander.

Note

The self-timer recording mode is automatically canceled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

To check the image to be recorded

You can check the image by lightly pressing PHOTO, then press it deeper to start self-timer recording.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

– DCR-TRV340 only

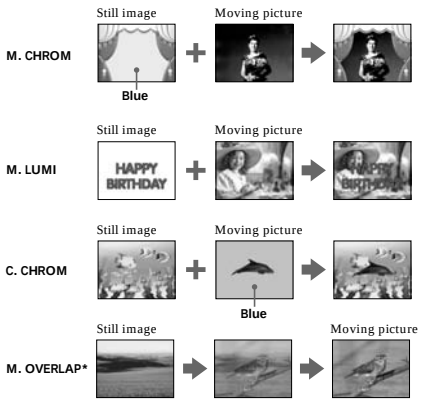
You can superimpose a still image you have recorded on the "Memory Stick" on the moving picture you are recording. You can record the superimposed images on a tape or a "Memory Stick". (However, you can record only superimposed still images on the "Memory Stick".)

M. CHROM (memory chroma key)
You can swap a blue area of a still image such as an illustration or a frame with a moving picture.

M. LUMI (memory luminance key)
You can swap a brighter area of a still image such as a handwritten illustration or title with a moving picture. Record a title on the "Memory Stick" before a trip or event for convenience.

C. CHROM (camera chroma key)
You can superimpose a moving picture on a still image such as an image can be used as background. Shoot the subject against a blue background. The blue area of the moving image will be swapped with a still image.

M. OVERLAP* (memory overlap)
You can make a moving picture fade in on top of a still image recorded on the "Memory Stick" as the overlap function.



* The superimposed image using Memory overlap function can be recorded on tapes only.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

Recording superimposed images on a tape

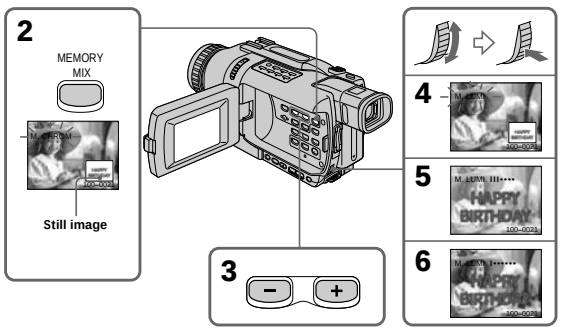
Before operation
• Insert a tape for recording into your camcorder.
• Insert a "Memory Stick" is recorded still images into your camcorder.

(1) Set the POWER switch to CAMERA.
(2) In the standby mode, press MEMORY MIX.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(3) Press MEMORY+ / – to select the still image you want to superimpose.
To see the previous image, press MEMORY –. To see the next image, press MEMORY+.
(4) Turn the SEL / PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM ↔ M. OVERLAP
(5) Press the SEL / PUSH EXEC dial.
The still image is superimposed on the moving picture.
(6) Turn the SEL / PUSH EXEC dial to adjust the effect.

M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving picture
M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving picture
C. CHROM – The color (blue) scheme of the area in the moving picture which is to be swapped with a still image
M. OVERLAP – No adjustment necessary

The fewer bars there are on the screen, the stronger the effect becomes.

(7) Press START / STOP to start recording.



Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

To change the still image to superimpose

Do either of the following:
– Press MEMORY+ / – before step 7.
– Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To change the mode setting

Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To cancel MEMORY MIX

Press MEMORY MIX.

Notes

• You cannot use the MEMORY MIX function for moving pictures recorded on "Memory Stick"s.
• When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.

Image data modified on your computer or shot with other equipment

You may not be able to play modified images back with your camcorder.

When you select M. OVERLAP

You cannot change the still image or the mode setting.

During recording

You cannot change the mode setting.

To record the superimposed image as a still image

Press PHOTO deeper in step 7.

Images processed by MEMORY MIX

You cannot record the images on "Memory Stick"s in CAMERA mode. Record them in MEMORY mode. (p. 130)

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

Recording superimposed images on a "Memory Stick" as a still image

Before operation
Insert a "Memory Stick" is recorded still images into your camcorder.

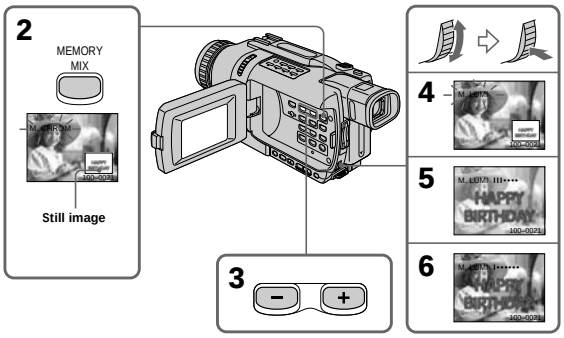
(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MEMORY MIX.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(3) Press MEMORY+ / – to select the still image you want to superimpose.
To see the previous image, press MEMORY –. To see the next image, press MEMORY+.
(4) Turn the SEL / PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM
(5) Press the SEL / PUSH EXEC dial.
The still image is superimposed on the moving picture.
(6) Turn the SEL / PUSH EXEC dial to adjust the effect.

M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving picture
M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving picture
C. CHROM – The color (blue) scheme of the area in the moving picture which is to be swapped with a still image

The fewer bars there are on the screen, the stronger the effect becomes.

(7) Press PHOTO deeper to start recording.
The image displayed on the screen will be recorded on a "Memory Stick."
Recording is complete when the bar scroll indicator disappears.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX



To change the still image to superimpose
Do either of the following:
– Press MEMORY+ / – before step 7.
– Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To change the mode setting
Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To cancel MEMORY MIX
Press MEMORY MIX.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

Notes
• You cannot use the MEMORY MIX function for moving pictures recorded on "Memory Stick"s.
• When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.

Image data modified on your computer or shot with other equipment
You may not be able to play modified images back with your camcorder.

During recording
You cannot change the mode setting.

When recording images on a "Memory Stick" using the MEMORY MIX function
The PROGRAM AE function does not work. (The indicator flashes.)

The "Memory Stick" supplied with your camcorder is already stored with 20 images
– For M. CHROM: 18 images (such as a frame) 100-0001~100-0018
– For C. CHROM: two images (such as a background) 100-0019~100-0020

Sample images
Sample images stored in the "Memory Stick" supplied with your camcorder are protected (p. 168).

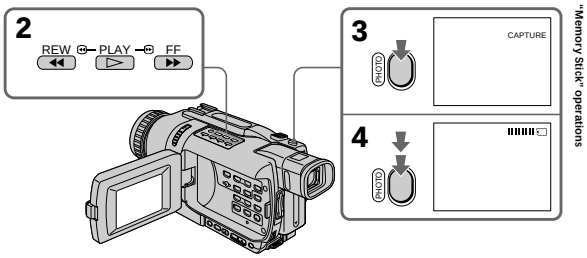
While using the MEMORY MIX function
The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording images from a tape as still images

– DCR-TRV340 only
Your camcorder can read moving image data recorded on a tape recorded in the Digital8 system, and record it as a still image on a "Memory Stick."
Your camcorder can also capture moving image data through the input connector and record it as a still image on a "Memory Stick."

Before operation
• Insert a tape recorded in the Digital8 system into your camcorder.
• Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press ►. Moving pictures recorded on the tape are played back.
(3) Keep pressing PHOTO lightly until the picture from the tape freezes.
"CAPTURE" appears on the screen. Recording does not start yet.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded on the "Memory Stick". Recording is complete when the bar scroll indicator disappears.



When the access lamp is lit or flashing
Do not shake or knock the unit. Also do not turn the power off, eject the "Memory Stick" or remove the battery pack. Otherwise, image data may become damaged.

If appears on the screen
The inserted "Memory Stick" is incompatible with your camcorder because its format does not conform with your camcorder. Check the format of the "Memory Stick."

If you press PHOTO lightly in the playback mode
Your camcorder stops momentarily.

Sound recorded on a tape
You cannot record audio from a tape.

When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Titles superimposed on tapes
You cannot record titles on the "Memory Stick." However, you can record titles which have already been recorded on tapes.

Recording date/time
The recording data (date/time) when it is recorded on "Memory Stick" is recorded. Various settings are not recorded.

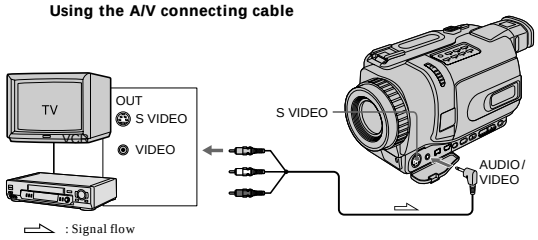
While recording still images from a tape as still images
The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording a still image from external equipment

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Play back the recorded tape, or turn the TV on to see the desired program. The picture from TV or VCR appears on the screen of your camcorder.
(3) Follow the steps 3 and 4 on page 133.

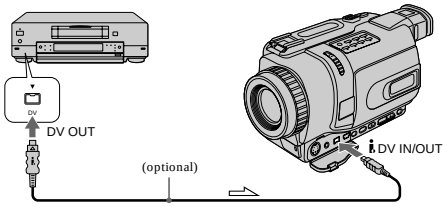
Using the A/V connecting cable



Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable (DV connecting cable)



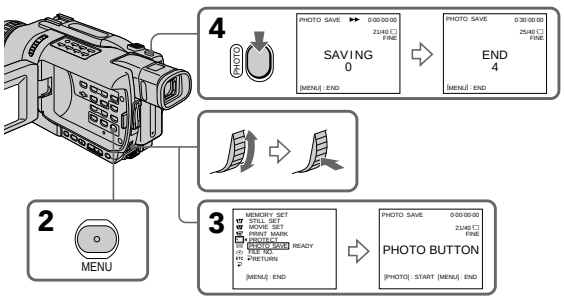
Note
In the following instances, "REC ERROR" is displayed and recording is not possible. Record undistorted images.
– When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
– Between scenes or in the various playback modes on the tape recorded in Hi8/standard 8 system
– When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use

Copying still images from a tape – PHOTO SAVE

– DCR-TRV340 only
Using the search function, you can automatically capture only still images from tapes recorded in the Digital8 system and record them on a "Memory Stick" in sequence.

Before operation
• Insert a tape recorded in the Digital8 system and rewind the tape.
• Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press MENU to display the menu settings.
(3) Turn the SEL/PUSH EXEC dial to select PHOTO SAVE in , then press the dial.
PHOTO BUTTON appears on the screen.
(4) Press PHOTO deeper. The still image from the tape is recorded on the "Memory Stick." The number of still images copied is displayed. END is displayed when copying ends.



To stop copying
Press MENU.

When the "Memory Stick" becomes full
"MEMORY FULL" appears on the screen, and copying stops. Insert another "Memory Stick" and repeat the procedure from step 2.

When the access lamp is lit or flashing
Do not shake or knock your camcorder. As well do not turn the power off, eject the "Memory Stick" or remove the battery pack. Otherwise, image data may become damaged.

If the write-protect tab on the "Memory Stick" is set to LOCK
"NOT READY" appears on the screen when you select PHOTO SAVE in the menu settings.

When you change the "Memory Stick" during copying
Your camcorder resumes copying from the last image recorded on the previous "Memory Stick".

While copying still images from a tape
The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording moving pictures on “Memory Stick”s – MPEG movie recording

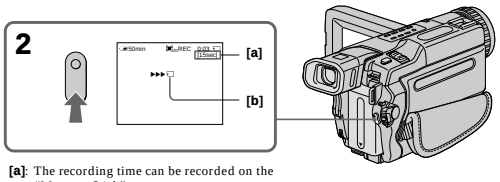
– DCR-TRV340 only

You can record moving pictures with sound on “Memory Stick”s.

Before operation

Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press START/STOP. Your camcorder starts recording. The camera recording lamp located on the front of your camcorder lights up. When IMAGESIZE in the menu settings is set to 320 × 240, the maximum recording time is 15 seconds. However, when IMAGESIZE in the menu settings is set to 160 × 112, the maximum recording time is 60 seconds.



[a]: The recording time can be recorded on the “Memory Stick”
[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording

Press START/STOP.

Note

Sound is recorded in monaural.

When the POWER switch is set to MEMORY

The following functions do not work:
– Wide mode
– SUPER NIGHTSHOT
– Color Slow Shutter
– Fader
– Picture effects
– Digital effects
– Titles

Recording moving pictures on “Memory Stick”s – MPEG movie recording

When the POWER switch is set to MEMORY

The angle of view is slightly larger compared with the angle of view in CAMERA mode.

When using an external flash (optional)

Turn the power of the external flash off when recording moving pictures on “Memory Stick”s.
Otherwise, the charging sound for the flash may be recorded.

Recording date/time

The date/time are not displayed while recording. However, they are automatically recorded onto the “Memory Stick.”
To display the recording date/time, press DATA CODE on the Remote Commander during playback. Various settings cannot be recorded.

During recording on “Memory Stick”

Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is not recorded on the “Memory Stick.”

Recording pictures from a tape as moving pictures

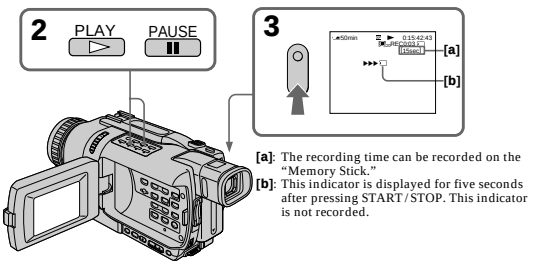
– DCR-TRV340 only

Your camcorder can read moving picture data recorded on tapes and record it as a moving picture on a “Memory Stick.” Your camcorder can also capture moving picture data through the input connector and record it as a moving picture on a “Memory Stick.”

Before operation

• Insert a recorded tape into your camcorder.
• Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press ►. The picture recorded on the tape is played back.
And press ❚❚ at the scene where you want to start recording from.
(3) Press START/STOP on your camcorder. When IMAGESIZE in the menu settings is set to 320 × 240, the maximum recording time is 15 seconds. However, when IMAGESIZE in the menu settings is set to 160 × 112, the maximum recording time is 60 seconds.



[a]: The recording time can be recorded on the “Memory Stick.”
[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording

Press START/STOP or ■.

Recording pictures from a tape as moving pictures

Notes

• Sound recorded in 48 kHz is converted to 32 kHz sound when recording pictures from a tape to “Memory Stick”s.
• Sound recorded in stereo is converted to monaural sound when recording from tape.

When the access lamp is lit or flashing

Do not shake or knock the unit. Also, do not turn the power off, eject a “Memory Stick” or remove the battery pack. Otherwise, image data may become damage.

If “⚠ AUDIO ERROR” is displayed

Sound that cannot be recorded by your camcorder has been recorded. Connect the A/V connecting cable to input images from external equipment used to play back the image (p. 142).

Recording date/time

The recording data (date/time) when it is recorded on “Memory Stick” is recorded. Various settings are not recorded.

The picture may be recorded on the “Memory Stick” incorrectly if:

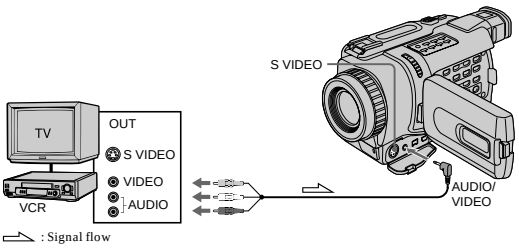
– You turn the POWER switch during recording
– You press any video control buttons during recording
– Between the scenes recorded in the Digital8 system and in the Hi8/standard 8 system.

Recording a moving picture from external equipment

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Play back the recorded tape, or turn the TV on to see the desired program. The picture of the other equipment is displayed on the LCD screen or viewfinder.
(3) Follow the procedure on page 140 from step 3 onwards at the point where you want to start recording from.

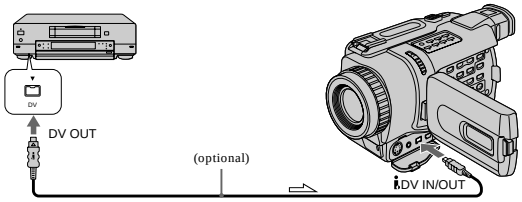
Using the A/V connecting cable



Connect the yellow plug of the A / V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A / V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable (DV connecting cable)



Note
In the following instances, recording is discontinued.
– When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
– Between scenes or in the various playback modes on the tape recorded in Hi8 / standard 8 system
– When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use
– The recording stops automatically if the picture is disrupted.
– When the input signal is cut off

When "REC ERROR" is displayed
Recording is discontinued, and image data is not saved.

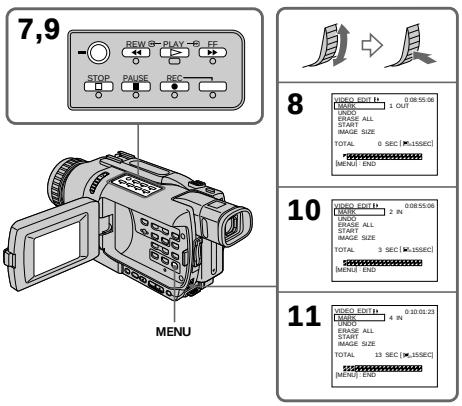
During recording on "Memory Stick"
Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is not recorded on the "Memory Stick."

Recording edited pictures as a moving picture – Digital program editing (on "Memory Stick"s)

– DCR-TRV340 only
You can duplicate selected scenes (programs) for editing onto "Memory Stick"s.

Making the program

(1) Set the POWER switch to VCR on your camcorder.
(2) Insert the tape for playback, and a "Memory Stick" for recording into your camcorder.
(3) Press MENU to display the menu settings.
(4) Turn the SEL / PUSH EXEC dial to select VIDEO EDIT in ETC, then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
(6) Turn the SEL / PUSH EXEC dial to select IMAGE SIZE, then press the dial.
(7) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.
(8) Press the SEL / PUSH EXEC dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
(9) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
(10) Press the SEL / PUSH EXEC dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
(11) Repeat steps 7 to 10, then set the program.
When one program is set, the program mark changes to light blue.
You can set 20 programs in maximum.



Erasing the program you have set
Erase OUT first and then IN from of the last program.

(1) Turn the SEL / PUSH EXEC to select UNDO, then press the dial.
(2) Turn the SEL / PUSH EXEC to select EXECUTE, then press the dial.

To cancel erasing
Select RETURN in step 2.

Erasing all programs
(1) Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
(2) Select ERASE ALL in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.

To cancel erasing all programs
Select RETURN in step 2.

To cancel a program you have set
Press MENU.
The program is stored in memory until the tape is ejected.

Notes
- Digital program editing works only for tapes recorded in the Digital8 system.
- You cannot dub the titles or display indicators.
- You cannot operate recording during Digital program editing on "Memory Stick"s.
- You cannot set IN or OUT on a blank portion of the tape.
- If there is a blank portion between IN and OUT on the tape, the total time code may not be displayed correctly.

During making a program
If you eject the cassette, NOT READY appears on the screen. The program will be erased.

If you set over the maximum recording time
The program mark changes to yellow, and OVER 15 SEC LIMIT appears when IMAGE SIZE is set to 320 × 240, or OVER 60 SEC LIMIT appears when IMAGE SIZE is set to 160 × 112. However, you can record up to the maximum recording time.

Performing the program (Dubbing a "Memory Stick")

(1) Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
(2) Select START in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, the EDITING indicator appears during writing of data on your camcorder, and REC appears during dubbing on the screen.
The program mark changes to light blue after dubbing is complete.
When the dubbing ends, your camcorder automatically stops.

To stop dubbing during editing
Press ■ using the video operation buttons.
The program you made is recorded on a "Memory Stick" up to the place where you pressed ■.

To end the Digital program editing function
Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to end the Digital program editing function.

NOT READY appears on the LCD screen when:
– The program to operate Digital program editing has not been made.
– The "Memory Stick" is not inserted.
– The write-protect tab on the "Memory Stick" is set to LOCK.
– "Memory Stick" does not have enough space to record.

When "Memory Stick" does not have enough space to record
LOW MEMORY appears on the screen. However, you can record pictures up to the time indicated.

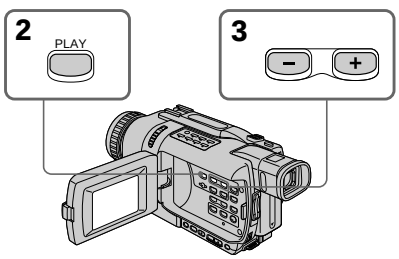
If you set over the maximum recording time
OVER MEMORY LIMIT appears on the screen. However, you can record moving pictures up to the maximum recording time.

Viewing still images – Memory Photo playback

– DCR-TRV340 only
You can play back still images recorded on a "Memory Stick". You can also play back six images including moving pictures in order at a time by selecting the index screen.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MEMORY PLAY. The last recorded image is displayed.
(3) Press MEMORY + / – to select the desired still image. To see the previous image, press MEMORY –. To see the next image, press MEMORY +.



To stop memory photo playback
Press MEMORY PLAY.

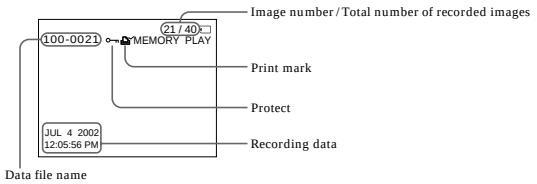
Note
You may not be able to play back images with your camcorder:
– When playing back image data modified on your computer.
– When playing back image data shot with other equipment.

Notes on the file name
- The directory number may not be displayed and only the file name may be displayed if the structure of the directory does not conform to the DCF standard.
- "DIRECTORY ERROR" may appear on the screen if the structure of the directory does not conform to the DCF standard. While this message appears, you can play back images but cannot record them on the "Memory Stick."
- The file name flashes on the screen if the file is corrupted or the file is unreadable.

To play back recorded images on a TV screen
- Before operation connect your camcorder to the TV with the A / V connecting cable supplied with your camcorder.
- When operating memory photo playback on a TV or the LCD screen, image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

When no still image is recorded on the "Memory Stick"
The message "NO FILE" appears.

Screen indicators during still image playback



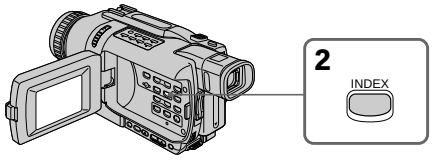
Recording data
You can view recording data (date / time or various settings when recorded) by pressing DATA CODE on the Remote Commander.

Viewing still images – Memory Photo playback

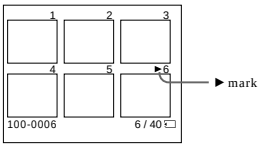
Playing back six recorded images at a time (index screen)

You can play back six recorded images at a time. This function is especially useful when searching for a particular image.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MEMORY INDEX to display the index screen.



A red ► mark appears above the image that is displayed before changing to the index screen mode.



• To see the next six images, keep pressing MEMORY +.
• To see the previous six images, keep pressing MEMORY –.

To return to the normal playback screen (single screen)
Press MEMORY +/– to move the ► mark to the image you want to display on full screen, then press MEMORY PLAY.

Note
When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the "Memory Stick". These numbers are different from the data file names (p. 115).

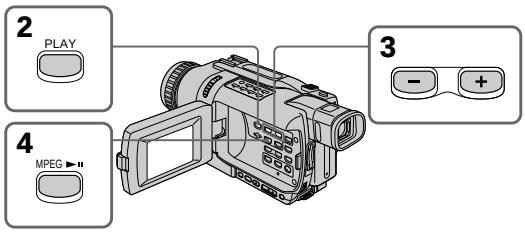
Image data modified on your computer or shot with other equipment
These files are sometimes not displayed on the index screen.

Viewing moving pictures – MPEG movie playback

– DCR-TRV340 only
You can play back moving pictures recorded on a "Memory Stick." You can also play back six images including still images in order at a time by selecting the index screen.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MEMORY PLAY. The last recorded image is displayed.
(3) Press MEMORY +/– to select the desired moving pictures. To see the previous picture, press MEMORY –. To see the next picture, press MEMORY +.
(4) Press MPEG ►II to start playback.



To stop MPEG movie playback
Press MPEG ►II .

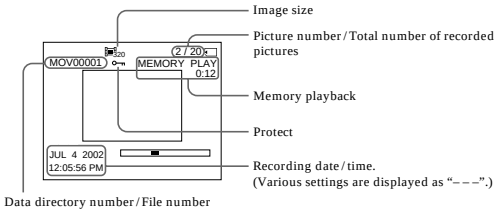
Note
You may not be able to play back images with your camcorder:
– When playing back image data modified on your computer.
– When playing back image data shot with other equipment.

To play back recorded images on a TV screen
• Before operation, connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder.
• Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

When no image is recorded on the "Memory Stick"
The message "NO FILE" appears.

Viewing moving pictures – MPEG movie playback

Screen indicators during moving picture playback



Recording date/time
You can view recording date / time by pressing DATA CODE on the Remote Commander during playback.

Viewing images recorded on "Memory Stick"s on your computer

– DCR-TRV340 only
You can view data recorded on the "Memory Stick" on your computer.

Note
Data recorded on the "Memory Stick" is stored in the following formats. Make sure that applications that support these file formats are installed on your computer.
– Still images: JPEG format
– Moving pictures / audio: MPEG format

Viewing images using computer
For Windows users (p. 154)
For Macintosh users (p. 158)

Notes
• Operations are not guaranteed for either the Windows or Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
• Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
• Operations are not guaranteed for all the recommended computer environments mentioned above.
• All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual.

For Windows users

Recommended Windows environment

OS: Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional standard installation is required.
However, operation is not assured if the above environment is an upgraded OS.

CPU: MMX Pentium 200 MHz or faster

The USB connector must be provided as standard.

Windows Media Player must be installed (to play back moving pictures).

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.
If you installed the USB driver in "Viewing images recorded on tape on your computer" (p. 95), start from step 5.

For Windows XP users

The USB driver needs not be installed. Your computer is automatically recognized as a driver just by connecting your computer using the USB cable.

For Windows 98/98SE/Me, Windows 2000 Professional users

If you are using Windows 2000 Professional, log in with permission of administrator.

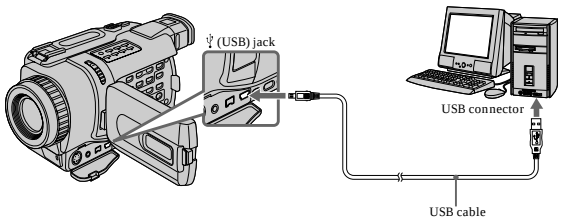
Start the following operation without connecting the USB cable to your computer.
Connect the USB cable in step 6.

If the USB driver has been registered incorrectly because your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 156.

(1) Turn on the power of your computer and allow Windows to load.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer. The application software screen appears.

(3) Move the cursor to "USB Driver" and click. This starts USB driver installation.

(4) Follow the on-screen messages to install the USB driver.
(5) Insert a "Memory Stick" into your camcorder, connect the AC power adaptor and set the POWER switch to MEMORY.
(6) Connect the Ψ (USB) jack on your camcorder with the USB connector on your computer using the supplied USB cable.
USB MODE appears on the LCD screen of your camcorder. Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.
(7) Follow the on-screen messages to make the Add Hardware Wizard recognize the hardware. The Add Hardware Wizard starts two times because two different USB drivers are installed. Be sure to allow each installation to complete without interrupting them.



Note
You cannot install the USB driver if a "Memory Stick" is not in your camcorder.
Be sure to insert a "Memory Stick" into your camcorder before installing the USB driver.

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Step1: Uninstall the incorrect USB driver

① Turn on your computer and allow Windows to load.
② Insert a "Memory Stick" into your camcorder.
③ Connect the AC power adaptor, and set the POWER switch to MEMORY.
④ Connect the USB connector on your computer to the Ψ (USB) jack on your camcorder using the USB cable supplied with your camcorder.
⑤ Open your computer's "Device Manager".
Windows 2000 Professional:
Select "My Computer" → "Control Panel" → "Hardware" tab, and click the "Device Manager" button.
Other OS:
Select "My Computer" → "Control Panel" → "System", and click "Device Manager".
⑥ Select "Other devices".
Select the device prefixed with the "?" mark and delete.
Ex: (?)Sony Camcorder
⑦ Turn the POWER switch to OFF (CHG), and then disconnect the USB cable.
⑧ Restart your computer.

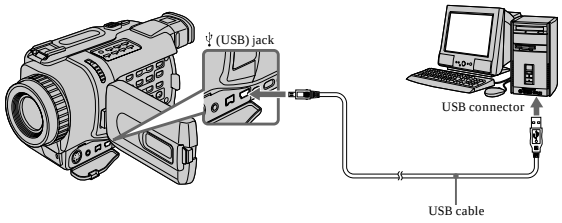
Step2: Install the USB driver on the CD-ROM

Perform the entire procedure described in "Installing the USB driver" on page 154.

Viewing images on Windows

An application such as Windows Media Player must be installed to play back moving pictures in Windows environment.

(1) Turn on your computer and allow Windows to load.
(2) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder and then to a wall outlet.
(3) Set the POWER switch to MEMORY.
(4) Connect one end of the USB cable to the Ψ (USB) jack on the camcorder and the other end to the USB connector on your computer.
USB MODE appears on the screen of your camcorder.
(5) Open "My Computer" on Windows and double-click the newly recognized drive (Example: "Removable Disk (E:)").
The folders inside the "Memory Stick" are displayed.
(6) Select and double-click the desired image file from the folder.
For the detailed folder and file name, see "Image file storage destinations and image files" (p. 161).



Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving picture*	"Mssony" folder → "Moml0001" folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the "Memory Stick," the image and sound may break off.

Unplug the USB cable or eject the "Memory Stick"

– For Windows 2000 Professional/Me, Windows XP users

To unplug the USB cable or eject the "Memory Stick," follow the procedure below.

(1) Move the cursor to the "Unplug or Eject Hardware" icon on the Task Tray and click to cancel the applicable drive.
(2) A message to remove the device from the system appears, then unplug the USB cable or eject the "Memory Stick."
(3) Set the POWER switch of your camcorder to OFF(CHG).

For Macintosh users

Recommended Macintosh environment

Mac OS 8.5.1/8.6/9.0/9.1/9.2 or Mac OS X (v10.0/v10.1) standard installation is required.
However, note that the update to Mac OS 9.0/9.1 should be used for the following models.

- iMac with the Mac OS 8.6 standard installation and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 standard installation

The USB connector must be provided as standard.

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder. Do not connect the USB cable to your computer before installation of the USB driver is completed.

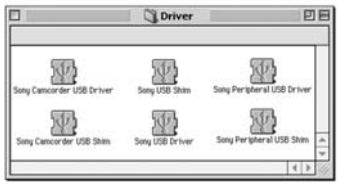
For Mac OS 9.1/9.2/Mac OS X (v10.0/v10.1)

The USB driver need not be installed. Your Mac is automatically recognized as a driver just by connecting your Mac using the USB cable.

For Mac OS 8.5.1/8.6/9.0 users

(1) Turn on your computer and allow the Mac OS to load.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software screen appears.

(3) Click "USB Driver" to open the folder containing the six files related to "Driver".



(4) Select all six files, and drag and drop them into the System Folder.
(5) When the message appears, click "OK."
(6) Restart your computer.

Viewing images on Macintosh

QuickTime 3.0 or newer must be installed to play back moving pictures in Macintosh environment.

(1) Turn on your computer and allow Mac OS to load.
(2) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder and then to a wall outlet.
(3) Set the POWER switch to MEMORY.
(4) Connect one end of the USB cable to the ⑂ (USB) jack on the camcorder and the other end to the USB connector on your computer.
USB MODE appears on the screen of your camcorder.
(5) Double click the newly recognized icon on the desktop.
The folders inside the "Memory Stick" are displayed.
(6) Select and double-click the desired image file from the folder.

Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving picture*	"Mssony" folder → "Moml0001" folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the "Memory Stick," the image and sound may break off.

Unplug the USB cable or eject the "Memory Stick"

To unplug the USB cable or eject the "Memory Stick", follow the procedure below.

(1) Close all running applications.
Make sure that the access lamp of the hard disk is not lit.
(2) Drag and drop the "Memory Stick" icon to the Trash or select Eject under the Special menu.
(3) Unplug the USB cable or eject the "Memory Stick." Set the POWER switch of your camcorder to OFF(CHG).

For Mac OS X (v10.0) users

Shutting down your computer, then unplug the USB cable or eject the "Memory Stick".

Notes on using your computer

"Memory Stick"

- "Memory Stick" operations on your camcorder cannot be assured if a "Memory Stick" formatted on your computer is used on your camcorder, or if the "Memory Stick" in your camcorder was formatted from your computer when the USB cable was connected.
- Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camcorder.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using retouching software from your computer to your camcorder or when you directly modify the image on your camcorder, the image format will differ so a file error indicator may appear and you may be unable to open the file.

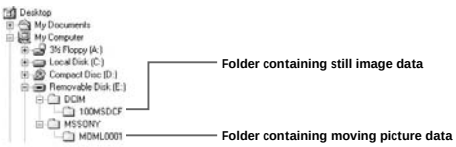
Communications with your computer

Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

Image file storage destinations and image files

Image files recorded with your camcorder are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows Me users (The drive recognizing your camcorder is [E:].)



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	Still image file
MOML0001	MOV0□□□□.MPG	Moving picture file

Copying images recorded on “Memory Stick”s to tape

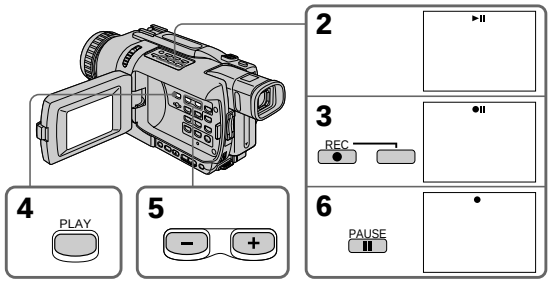
– DCR-TRV340 only

You can copy still images recorded on “Memory Stick”s and record them to tapes.

Before operation

• Insert a tape for recording into your camcorder.
• Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to VCR.
(2) Using the video control buttons, search a point where you want to record the desired still image. Set the tape to playback pause mode.
(3) Press ● REC and the button on its right simultaneously on your camcorder. The tape is set to the recording pause mode.
(4) Press MEMORY PLAY. The last recorded image is displayed.
(5) Press MEMORY+ / – to select the desired image.
To see the previous image, press MEMORY–. To see the next image, press MEMORY+.
(6) Press ▮▮ to start recording and press ▮▮ again to stop.
● appears on the screen during recording.
(7) If you have more to copy, repeat steps 4 to 6.



To stop copying

Press ■.

Copying images recorded on “Memory Stick”s to tape

During copying

You cannot operate the following buttons:
– MEMORY PLAY
– MEMORY INDEX
– MEMORY DELETE
– MEMORY MIX
– MEMORY + / –

Note on the index screen

You cannot record the index screen.

If you press EDITSEARCH during pause mode

Memory playback stops.

Image data modified on your computer or shot with other equipment

You may not be able to copy modified images with your camcorder.

If you press DISPLAY in the standby or recording mode

You can see memory playback and the file name indicators in addition to the indicators pertinent to tapes, such as the time code indicator.

Enlarging still images recorded on “Memory Stick”s – Memory PB ZOOM

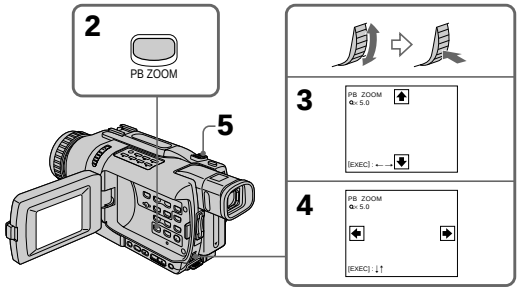
– DCR-TRV340 only

You can enlarge still images recorded on a “Memory Stick.” You can select and view a desired part from the enlarged still image. Also, you can copy the desired part of the enlarged still image to tapes or “Memory Stick”s.

Before operation

Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press PB ZOOM on your camcorder while you are playing back images recorded on “Memory Stick.” The still image is enlarged, and ↑↓ indicators showing the direction to move the image appear on the screen.
(3) Turn SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
↑ : The image moves downward.
↓ : The image moves upward.
←→ becomes available.
(4) Turn SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
← : The image moves rightward. (Turn the dial downward.)
→ : The image moves leftward. (Turn the dial upward.)
(5) Adjust the zoom ratio by the power zoom lever.
You can enlarge the image from 1.1 times up to five times its size.
W : Decreases the zoom ratio.
T : Increase the zoom ratio.



Enlarging still images recorded on “Memory Stick”s – Memory PB ZOOM

To cancel memory PB ZOOM mode

Press PB ZOOM.

The PB ZOOM mode is canceled when the following buttons are pressed:

– MENU
– MEMORY PLAY
– MEMORY INDEX
– MEMORY + / –

Moving pictures recorded on “Memory Stick”s

The PB ZOOM mode does not work.

To record an image processed by PB ZOOM on “Memory Stick”s

Press PHOTO to record the image processed by PB ZOOM.

To record an image processed by PB ZOOM on tape

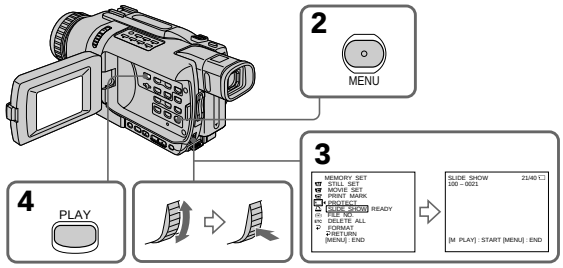
Press REC to record the image processed by Memory PB ZOOM.

Playing back images in a continuous loop – SLIDE SHOW

– DCR-TRV340 only
You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select SLIDE SHOW in , then press the dial.
(4) Press MEMORY PLAY. Your camcorder plays back the images recorded on the "Memory Stick" in sequence.



To stop the slide show
Press MENU.

To pause during a slide show
Press MEMORY PLAY.

To start the slide show from a particular image
Select the desired image using MEMORY + / – buttons before step 2.

To view recorded images on TV
Before operation, connect your camcorder to a TV with the A / V connecting cable supplied with your camcorder.

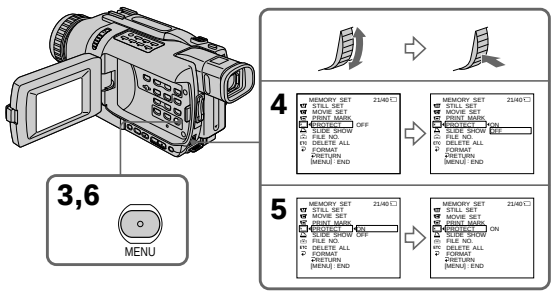
If you change the "Memory Stick" during operation
The slide show function does not operate. If you change the "Memory Stick", be sure to follow the steps again from the beginning.

Preventing accidental erasure – Image protection

– DCR-TRV340 only
You can protect selected images, to prevent accidental erasure of important images.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Play back the image you want to protect.
(3) Press MENU to display the menu settings.
(4) Turn the SEL / PUSH EXEC dial to select PROTECT in , then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(6) Press MENU to make the menu settings disappear. The mark is displayed beside the data file name of the protected image.



To cancel image protection
Select OFF in step 5, then press the SEL / PUSH EXEC dial.

Note
Formatting erases all information on the "Memory Stick", including the protected image data. Before formatting a "Memory Stick", check its contents.

If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot protect images.

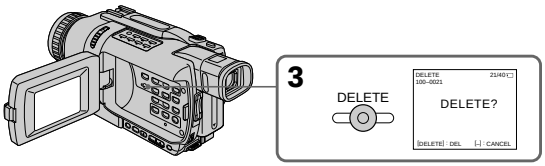
Deleting images – DELETE

– DCR-TRV340 only
You can delete images stored in a "Memory Stick." You can delete all images or only selected images.

Deleting selected images

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Play back the image you want to delete.
(3) Press MEMORY DELETE. "DELETE?" appears on the screen.
(4) Press MEMORY DELETE again. The selected image is deleted.



To cancel deleting an image
Press MEMORY – in step 4.

To delete an image displayed on the index screen
Press MEMORY + / – to move the ▶ indicator to the image and follow steps 3 and 4.

Notes
• You cannot delete a protected image. To delete a protected image, first cancel image protection.
• Once you delete an image, you cannot restore it. Before deleting an image, carefully check the image.

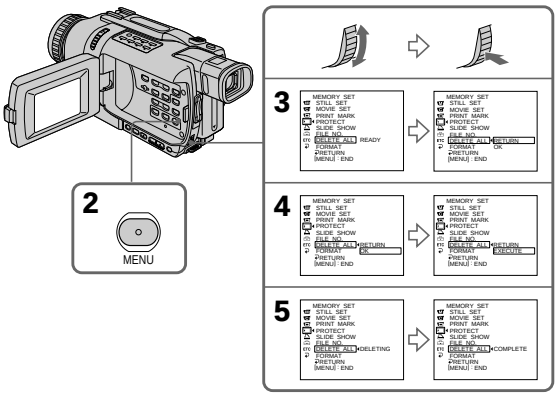
If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot delete images.

Deleting all images

You can delete all unprotected images in the "Memory Stick."

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MENU to display the menu settings.
(3) Turn the SEL / PUSH EXEC dial to select DELETE ALL in , then press the dial.
(4) Turn the SEL / PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
(5) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial. DELETING appears on the screen. When all unprotected images are deleted, COMPLETE is displayed.



To cancel deleting all the images in the "Memory Stick"
Select RETURN in step 4, then press the SEL / PUSH EXEC.

While DELETING appears
Do not turn the POWER switch or press any buttons.

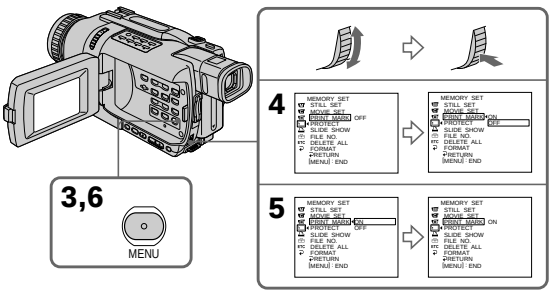
If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot delete images.

Writing a print mark – PRINT MARK

– DCR-TRV340 only
You can specify a recorded still image to print out by writing a print mark. This function is useful for printing out still images later.
Your camcorder conforms to the DPOF (Digital Print Order Format) standard for specifying still images to print out.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Play back the still image you want to write a print mark on.
(3) Press MENU to display the menu settings.
(4) Turn the SEL / PUSH EXEC dial to select PRINT MARK in , then press the dial.
(5) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
(6) Press MENU to make the menu settings disappear. The mark is displayed beside the data file name of the image with a print mark.



To cancel writing of print marks
Select OFF in step 5, then press the SEL / PUSH EXEC dial.

If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot write print marks on still images.

Moving pictures
You cannot write print marks on moving pictures.

While the file name is flashing
You cannot write the print mark on the still image.

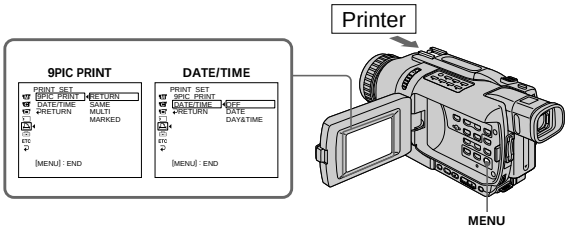
Using the optional printer

– DCR-TRV340 only

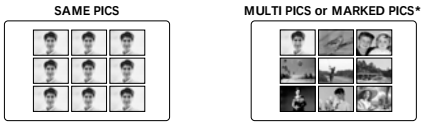
You can use the printer (optional) on your camcorder to print images on print paper. For details, refer to the operating instructions of the printer.
There are various ways of printing still images. The following, however, describes how to print by selecting in the menu settings on your camcorder. (p. 104)

Before operation

- Insert a recorded "Memory Stick" into your camcorder.
- Attach the optional printer to your camcorder.

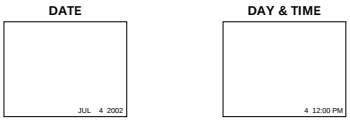


You can print nine still images on the 9-split print paper. Select the desired mode in the menu settings.



* Nine still images with print marks are printed together.

You can make prints with the recording date and / or recording time. Select the desired mode in the menu settings.



Images recorded in the multi screen mode
You cannot print images recorded in the multi screen mode on sticker type print paper.

Moving pictures recorded on "Memory Stick"
You cannot print moving pictures.

When "Memory Stick" has no files
"NO STILL IMAGE FILE" appears on the screen.

When there are no files with a PRINT MARK
"NO PRINT MARK" appears on the screen.

Types of trouble and how to correct trouble

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer or local authorized Sony service facility. If "C:□□:□□" appears on the screen or the display window, the self-diagnosis display function has worked. See page 182.

In the recording mode

Symptom	Cause and/or Corrective Actions
START / STOP does not operate.	• The POWER switch is not set to CAMERA. → Set it to CAMERA (p. 20). • The tape has run out. → Rewind the cassette or insert a new one (p. 19, 33). • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab (p. 19). • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).
The power goes off.	• While being operated in CAMERA mode, your camcorder has been in the standby mode for more than three minutes. → Set the POWER switch to OFF (CHG) and then to CAMERA again (p. 20). • The battery pack is dead or nearly dead. → Install a charged battery pack (p. 12, 13).
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens (p. 24).
The SteadyShot function does not work.	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON (p. 104). • 16:9WIDE is set to ON in the menu settings. → Set it to OFF (p. 104).
The autofocusing function does not work.	• The setting is the manual focus mode. → Set FOCUS to the autofocus mode (p. 53). • Shooting conditions are not suitable for autofocus. → Adjust for manual focusing (p. 53).
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel (p. 22).
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.
Some tiny white spots appear on the screen.	• Slow shutter, Super NightShot or Color Slow Shutter mode is activated. This is not a malfunction.

Symptom	Cause and/or Corrective Actions
An unknown picture is displayed on the screen.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings without a cassette inserted, your camcorder automatically starts the demonstration. → Insert a cassette and the demonstration stops. You can also cancel DEMO MODE (p. 104).
The picture is recorded in incorrect or unnatural colors.	• NIGHTSHOT is set to ON. → Set it to OFF (p. 28).
Picture appears too bright, and the subject does not appear on the screen.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF (p. 28). • The backlight function is active. → Set it off (p. 27).
The shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL (p. 104).
A horizontal black band appears when shooting a TV screen or a computer screen.	• Set STEADYSHOT to OFF in the menu setting (p. 104).
An external flash (optional) does not work.	• The power of the external flash is off or the power source does not installed. → Turn on the external flash or install the power source. • Two or more external flashes are attached. → Only one external flash can be attached. • AUTO is selected in FLASH MODE in the menu settings while recording in a bright place. → Set it to ON (p. 104).

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VCR. → Set it to VCR (p. 33).
The playback button does not work.	• The cassette has run out of tape. → Rewind the tape (p. 33).
There are horizontal lines on the picture, or the playback picture is not clear or does not appear.	• The video heads may be dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (optional) (p. 193).
No sound or only a low sound is heard when playing back a tape.	• The stereo tape is played back with HiFi SOUND set to 2 in the menu settings. → Set it to STEREO (p. 104). • The volume is turned to minimum. → Press VOLUME + (p. 33). • AUDIO MIX is set to the ST2 side in the menu settings. → Adjust AUDIO MIX (p. 104).
The date search does not work correctly.	• The tape has a blank portion between recorded portion (p. 67).
The picture which is recorded in the Digital8 system is not played back.	• PB MODE is set to Hi8/8 in the menu settings. → Set it to AUTO (p. 104).
The tape which is recorded in the Hi8 / standard 8 system is not played back correctly.	• Set PB MODE to Hi8/8 in the menu settings (p. 104).

(continued on the following page)

In the recording and playback modes

Symptom	Cause and/or Corrective Actions
The power does not turn on.	• The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack (p. 12, 13). • The AC power adaptor is not connected to a wall outlet. → Connect the AC power adaptor to a wall outlet (p. 16).
The end search function does not work.	• The tape was ejected after recording. • You have not recorded on the new cassette yet.
The end search function does not work correctly.	• The tape has a blank portion at the beginning or midway.
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not charged enough. → Charge the battery pack fully again (p. 13). • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 12).
The remaining battery time indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 12). • The battery is dead. → Use a fully charged battery pack (p. 12, 13). • A deviation has occurred in the remaining battery time. → Charge the battery pack fully so that the remaining battery time indicator indicates correct time (p. 13).
The power goes off although the remaining battery time indicator indicates that the battery pack has enough power to operate.	• A deviation has occurred in the remaining battery time. → Charge the battery pack fully so that the remaining battery time indicator indicates correct time (p. 13).
The cassette cannot be removed from the holder.	• The power source is disconnected. → Connect it firmly (p. 12, 16). • The battery is dead. → Use a charged battery pack (p. 12, 13).
The ⚅ and ⏏ indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).

When operating using the "Memory Stick"

– DCR-TRV340 only

Symptom	Cause and/or Corrective Actions
The "Memory Stick" does not function.	• The POWER switch is not set to MEMORY. → Set it to MEMORY (p. 122). • The "Memory Stick" is not inserted. → Insert a "Memory Stick" (p. 117).
Recording does not function.	• The "Memory Stick" is full. → Delete unnecessary images and record again (p. 169). • The "Memory Stick" formatted incorrectly is inserted. → Format the "Memory Stick" on your camcorder or use another "Memory Stick" (p. 110, 117). • The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115).
The image cannot be deleted.	• The image is protected. → Cancel image protection (p. 168). • The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115).
You cannot format the "Memory Stick".	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115).
Deleting all the images cannot be carried out.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115).
You cannot protect the image.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115). • The image to protect is not played back. → Press MEMORY PLAY to play back the image (p. 148).
You cannot write a print mark on the still image.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115). • The image to write a print mark to is not played back. → Press MEMORY PLAY to play back the image (p. 148). • You are trying to write a print mark on a moving picture. → Print marks cannot be written on a moving picture.
The photo save function does not work.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock (p. 115).

(continued on the following page)

Others

Symptom	Cause and/or Corrective Actions
Digital program editing to a tape does not function.	• The input selector on the VCR is not set correctly. → Check the connection and set the input selector on the VCR again (p. 74) • Your camcorder is connected to DV equipment of other than Sony using the i.LINK cable (DV connecting cable). → Set it to IR (p. 74). • You have attempted to set a program on a blank portion of the tape. → Set the program again on a recorded portion (p. 83). • Your camcorder and the VCR are not synchronized. → Adjust the synchronization (p. 81). • The IR SETUP code is incorrect. → Set the correct code (p. 76). • PB MODE is set to Hi8/8 in the menu settings. → Set it to AUTO. (p. 104)
Digital program editing to a "Memory Stick" does not function. (DCR-TRV340 only)	• Setting program on a blank portion of the tape is attempted. → Set the program again on a recorded portion (p. 144).
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the menu settings. → Set it to ON (p. 104). • Something is blocking the infrared rays. → Remove the obstacle. • The batteries are inserted with + and – incorrectly matching + and – inside the battery compartment. → Insert the batteries correctly (p. 205). • The batteries are dead. → Insert new ones (p. 205).
The picture from a TV or VCR does not appear on the screen even when your camcorder is connected to outputs on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD (p. 104).
The melody or beep sounds for five seconds.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192). • Some trouble have occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
You cannot charge the battery pack.	• The POWER switch is not set to OFF (CHG). → Set it to OFF (CHG).
While charging the battery pack, the backlight of the display window does not light.	• Charging is completed. • The AC power adaptor is disconnected. → Connect it firmly (p. 13). • Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.

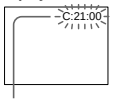
Others

Symptom	Cause and/or Corrective Actions
While charging the battery pack, the remaining battery time indicator flashes.	• The battery pack is not properly installed. → Install it properly. • Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.
No function works though the power is on.	• Disconnect the power cord of the AC power adaptor or remove the battery, then reconnect it in about one minute. Turn the power on. If the functions still do not work, open the LCD panel and press the RESET button under TITLE button using a sharp-pointed object (If you press the RESET button, all the settings including the date and time return to their defaults.) (p. 201).
Image data cannot be transferred by the USB connection.	• The USB cable was connected before installation of the USB driver was completed. → Uninstall the incorrect USB driver and re-install the USB driver (p. 96, 156).

Self-diagnosis display

Your camcorder has a self-diagnosis display function.
This function displays the current state of your camcorder as a 5-digit code (a combination of a letter and figures) on the screen or in the display window.
If a 5-digit code is displayed, check the following list of codes. The last two digits (indicated by □□) differ depending on the state of your camcorder.

LCD screen, viewfinder or display window



Self-diagnosis display
- C:□□:□□
  You can service your camcorder yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony facility.

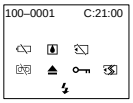
Five-digit display	Cause and/or Corrective Actions
C:04:□□	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack (p. 14, 187).
C:21:□□	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).
C:22:□□	• The video heads are dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (optional) (p. 193).
C:31:□□ C:32:□□	• A malfunction other than the above that you can service has occurred. → Remove the cassette and insert it again, then operate your camcorder. → Disconnect the power cord of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate your camcorder.
E:20:□□ E:61:□□ E:62:□□	• A malfunction that you cannot service has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit code. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Warning indicators and messages

If indicators and messages appear on the screen or in the display window, check the following.
See the page in parentheses "( )" for more information.

Warning indicators



100-0001 **Warning indicator as to file (DCR-TRV340 only)**
Slow flashing:
- The file is corrupted.
- The file is unreadable.
- You are trying to use the MEMORY MIX function on a moving picture (p. 129).

C:21:00 **Self-diagnosis display** (p. 182).

Warning indicator as to battery
Slow flashing:
- The battery is nearly dead.
  The indicator sometimes flashes even if the remaining battery time is about five to 10 minutes depending on the operating conditions, environment and battery condition.

Fast flashing:
- The battery is dead.

Moisture condensation has occurred*
Fast flashing:
- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 192).

Warning indicator as to "Memory Stick"* (DCR-TRV340 only)
Slow flashing:
- No "Memory Stick" is inserted.

Warning indicator as to "Memory Stick" formatting (DCR-TRV340 only)
Fast flashing:
- "Memory Stick" data is corrupted (p. 115).*
- "Memory Stick" is not formatted correctly (p. 110).

Warning indicator as to tape
Slow flashing:
- The tape is near the end.
- No tape is inserted.*
- The write-protect tab on the cassette is exposed (red) (p. 19).*

Fast flashing:
- The cassette has run out of tape.*

You need to eject the cassette*
Slow flashing:
- The write-protect tab on the cassette is exposed (red) (p. 19).

Fast flashing:
- Moisture condensation has occurred (p. 192).
- The cassette has run out of tape.
- The self-diagnosis display function is activated (p. 182).

The image is protected* (DCR-TRV340 only)
Slow flashing:
- The image is protected (p. 168).

Warning indicator as to the flash (optional)
Fast flashing:
- There is something wrong with the external flash (optional).

* You hear the melody or beep.

Warning indicators and messages

Warning messages

• CLOCK SET	Set the date and time (p. 17).
• FOR "InfoLITHIUM" BATTERY ONLY	Use an "InfoLITHIUM" battery pack (p. 187).
• TAPE END	The cassette has run out of tape.*
• NO TAPE	Insert a cassette tape.*
• CLEANING CASSETTE	The video heads are dirty. (The indicator and "CLEANING CASSETTE" message appear one after another on the screen.) (p. 193)
• COPY INHIBIT	You tried to record a picture that has a copyright control signal* (p. 185).
• FULL**	The "Memory Stick" is full* (p. 125).
• **	The write-protect tab on the "Memory Stick" is set to LOCK* (p. 115).
• NO FILE**	No still image is recorded on the "Memory Stick"* (p. 149).
• NO MEMORY STICK**	No "Memory Stick" is inserted.*
• AUDIO ERROR**	You are trying to record an image with sound that cannot be recorded by your camcorder on "Memory Stick"* (p. 141).
• MEMORY STICK ERROR**	The "Memory Stick" data is corrupted* (p. 117).
• FORMAT ERROR**	Check the type of formatting* (p. 110).
• DIRECTORY ERROR**	The "Memory Stick" has more than one directory such as 100msdcf* (p. 148).
• PLAY ERROR**	The image is distorted and cannot be played back.*
• REC ERROR**	Check the input signal before retrying recording* (p. 135, 143).
• NO PRINT MARK**	You selected MARKED in 9PIC PRINT in the menu settings using an "Memory Stick" contains no image with a print mark* (p. 175).
• NO STILL IMAGE FILE**	You selected MULTI in 9PIC PRINT in the menu settings using a "Memory Stick" contains no still image* (p. 175).
• DELETING**	You have pressed PHOTO during deleting all images on "Memory Stick."*
• FORMATTING**	You have pressed PHOTO during formatting a "Memory Stick."*
• NOW CHARGING	Charging an external flash (optional) does not work correctly.*

* You hear the melody or beep.
** DCR-TRV340 only

— Additional Information —

Digital8 system, recording and playback

What is the "Digital8 system"?

This video system has been developed to enable digital recording to Hi8 Hi8 / Digital8 video cassette.

Usable cassette tapes

We recommend using Hi8 Hi8 / Digital8 video cassette.*
The recording time when you use your Digital8 system camcorder on Hi8 Hi8 / standard 8 8 tape is half the recording time when using the conventional Hi8 Hi8 / standard 8 8 system camcorder. (120 minutes of recording time becomes 60 minutes in the SP mode.)
* If you use standard 8 8 tape, be sure to play back the tape on this camcorder. Mosaic pattern noise may appear when you play back standard 8 8 tape on other VCRs (including other DCR-TRV240 / TRV340).

Note
Tapes recorded in the Digital8 system cannot be played back on Hi8 Hi8 / standard 8 8 (analog) system machine.

8 is a trademark.
Hi8 is a trademark.
is a trademark.

Playback system

The Digital8 system or Hi8 Hi8 / standard 8 8 system is automatically detected before the tape is played back.
During playback of tapes recorded in the Hi8 Hi8 / standard 8 8 system, digital signals are output as the image signals from the DV IN / OUT jack.

Display during automatic detection of system
The Digital8 system or Hi8 Hi8 / standard 8 8 system is automatically detected, and the playback system is automatically switched to. During switching of systems, the screen turns blue, and the following displays appear on the screen. A hissing noise also sometimes can be heard.

→ Hi8 / 8: During switching from Digital8 to Hi8 Hi8 / standard 8 8
Hi8 / 8 → : During switching from Hi8 Hi8 / standard 8 8 to Digital8

Copyright signal

When you play back

Using any other video camera recorder, you cannot record on a tape that has recorded copyright control signals for copyright protection of software which is played back on your camcorder.

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.
COPY INHIBIT appears on the LCD screen, in the viewfinder or on the TV screen if you try to record such software. Your camcorder does not record copyright control signals on the tape when it records.

Digital8 (8) system, recording and playback

When you playback a dual sound track tape

When you use tapes recorded in the Digital8 (8) system

When you play back a Digital8 (8) system tape which is dubbed from a dual sound track tape recorded in the DV system, set HiFi SOUND to the desired mode in the menu settings (p. 104).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Lch	Main sound
2	Rch	Sub sound

When you use a tape recorded in the Hi8/standard 8 system

When you play back a dual sound track tape recorded in an AFM HiFi stereo system, set HiFi SOUND to the desired mode in the menu settings (p. 104).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Monaural	Main sound
2	Unnatural Sound	Sub sound

You cannot record dual sound programs on your camcorder.

About the "InfoLITHIUM" battery pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camcorder and an AC adaptor/charger (optional).
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the backlight of the display window goes out, indicating that the battery pack is fully charged. If you charge the battery outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

Effective use of the battery pack

- Battery pack performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to ensure longer battery pack use:
  – Put the battery pack in a pocket to warm it up, and insert it in your camcorder immediately before you start taking shots.
  – Use the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Frequently using the LCD panel or frequently operating playback, fast-forward or rewind wears out the battery pack faster. We recommend using the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Be sure to turn the POWER switch to OFF (CHG) when not taking shots or playing back on your camcorder. The battery pack is also consumed when your camcorder is in the standby mode or playback is paused.
- Have spare battery packs handy for two or three times the expected recording time, and make a trial recordings before taking the actual recording.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power may go off although the remaining battery time indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the remaining battery time indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.
- The mark indicating that there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is about five to 10 minutes.

About the "InfoLITHIUM" battery pack

How to store the battery pack

- If the battery pack is not used for a long time, do the following procedure once per year to maintain proper function.
  1. Fully charge the battery.
  2. Discharge on your electronic equipment.
  3. Remove the battery from the equipment and store it in a dry, cool place.
- To use the battery pack up on your camcorder, leave your camcorder in the standby mode until the power goes off without a cassette inserted.

Battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

About i.LINK

The DV jack on this unit is an i.LINK-compliant DV input/output jack. This section describes the i.LINK standard and its features.

What is "i.LINK"?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment.
i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment. When two or more i.LINK-compatible equipment are connected to this unit in a daisy chain, operations and data transactions are possible with not only the equipment that this unit is connected to but also with other devices via the directly connected equipment.
Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable (DV cable). When connecting this unit to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), refer to the operating instructions of the equipment to be connected.

About the name "i.LINK"

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations.
IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronic Engineers.

i.LINK baud rate

i.LINK's maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

S100 (approx. 100 Mbps*)
S200 (approx. 200 Mbps)
S400 (approx. 400 Mbps)

The baud rate is listed under "Specifications" in the operating instructions of each equipment. It is also indicated near the i.LINK jack on some equipment.
The maximum baud rate of equipment on which it is not indicated such as this unit is "S100".
When units are unit is connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

* What is "Mbps"?
Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

i.LINK functions on this unit

For details on how to dub when this unit is connected to other video equipment having DV jacks, see page 71, 135.
This unit can also be connected to other i.LINK (DV) compatible equipment made by SONY (e.g. VAIO series personal computer) other than video equipment.
Before connecting this unit to a personal computer, make sure that application software supported by this unit is already installed on the personal computer.
For details on precautions when connecting this unit, also refer to the operating instructions of the equipment to be connected.

Required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

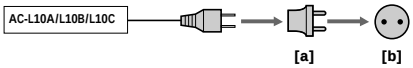
i.LINK and i, are trademarks.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

When charging the battery pack, use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet **[b]**.



Your camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV with VIDEO/AUDIO input jack. The following shows TV color systems used overseas.

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 104 for more information.

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep sounds and the ⬇ indicator flashes. When the ⏏ indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open. Your camcorder can be used again if the ⬇ indicator does not appear when the power is turned on again.

Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:
- You bring your camcorder from a ski slope into a place warmed up by a heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

How to prevent moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

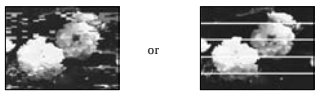
Maintenance information

Cleaning the video heads

To ensure normal recording and clear pictures, clean the video heads.

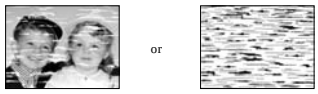
When you playback/record in the Digital8 (🎞) system

The video head may be dirty when:
- Mosaic-pattern noise appears on the playback picture.
- Playback pictures do not move.
- Playback pictures are hardly visible.
- Playback pictures do not appear.
- The ⊗ indicator and "🧹 CLEANING CASSETTE" message appear one after another.



When you play back in the Hi8/Standard 8 (analog) system

The video head may be dirty when:
- Playback pictures contain noise.
- Playback pictures are hardly visible.
- Playback pictures do not appear.



If the above problem occurs, clean the video heads with the Sony V8-25CLD cleaning cassette (optional). Check the picture and if the above problem persists, repeat cleaning.

Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using the LCD Cleaning Kit (optional) to clean the LCD screen.

Charging the built-in rechargeable battery

Your camcorder is supplied with a built-in rechargeable battery installed to retain the date and time, etc., regardless of the setting of the POWER switch. The built-in rechargeable battery is always charged as long as you are using your camcorder. The battery, however, will become discharged gradually if you do not use your camcorder. It will be completely discharged in about half a year if you do not use your camcorder at all. Even if the built-in rechargeable battery is not charged, it will not affect camcorder operation. To retain the date, time, and other information, charge the battery if the battery is discharged.

Charging the built-in rechargeable battery:

- Connect your camcorder to wall outlet using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or, install a fully charged battery pack in your camcorder, and leave your camcorder with the POWER switch set to OFF (CHG) for more than 24 hours.

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration. Noise may appear on the image.
- Do not touch the LCD screen with your fingers or a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the tape protect cover or touch the tape.

Camcorder care

- Remove the tape, and periodically turn on the power, operate the CAMERA and VCR sections and play back a tape for about three minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

Connection to your computer

When inputting the image recorded by Hi8/standard 8 system into Sony VAIO

The Program Capture function of DVgate motion doesn't work. To use this function, dub the image into a Digital8 or DV tape first, and then input it into your Sony VAIO.

AC power adaptor

- Unplug the unit from the wall outlet when you are not using it for a long time. To disconnect the power cord, pull it out by the plug. Never pull the power cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the power cord forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electric shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
  - When there are fingerprints on the lens surface
  - In hot or humid locations
  - When the lens is used in environments susceptible to salt such as the seaside
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from occurring, periodically perform the above.
We recommend turning on and operating your camcorder about once per month to keep your camcorder in an optimum state for a long time.

Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.

Notes on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:

– Be sure to insert the batteries with the + and – correctly matching the + and – inside the battery compartment.
– Dry batteries are not rechargeable.
– Do not use a combination of new and old batteries.
– Do not use different types of batteries.
– Current flows from batteries when you are not using them for a long time.
– Do not use leaking batteries.

If batteries are leaking

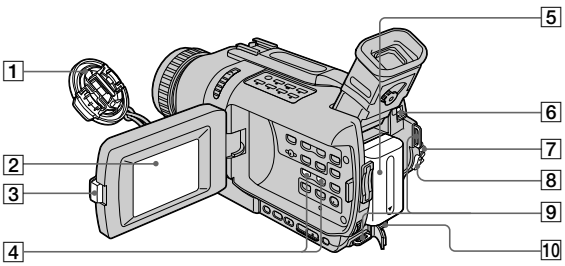
- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid gets into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

— Quick Reference —

Identifying parts and controls

Camcorder

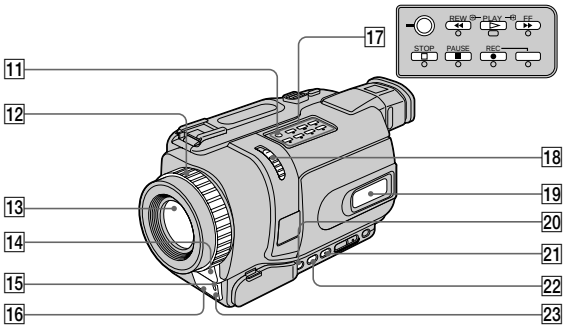


1 **Lens cap** (p. 20)
2 **LCD screen** (p. 20)
3 **OPEN button** (p. 20)
4 **VOLUME –/+ button** (p. 33)
5 **Battery pack** (p. 12)
6 **BATT (battery) release lever** (p. 12)
7 **POWER switch** (p. 20)
8 **START/STOP button** (p. 20)
9 **Hooks for shoulder strap**
10 **DC IN jack** (p. 13)

Attaching the shoulder strap

Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.

Identifying parts and controls



11 **SUPER NS/COLOR SLOW S button** (p. 28)

12 **Focus ring** (p. 53)

13 **Lens**

14 **Microphone**

15 **Camera recording lamp** (p. 20)

16 **Infrared rays emitter** (p. 28)

17 **Video control buttons** (p. 33, 35)
- ■ STOP (stop)
- ◄◄ REW (rewind)
- ► PLAY (playback)
- ►► FF (fast-forward)
- ❚❚ PAUSE (pause)
- ● REC (recording)

18 **NIGHTSHOT switch** (p. 28)

19 **Display window** (p. 206)

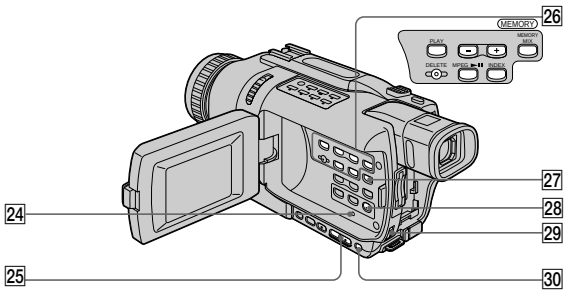
20 **FOCUS button** (p. 53)

21 **FADER button** (p. 44)

22 **BACK LIGHT button** (p. 27)

23 **Remote sensor**

Identifying parts and controls



24 **RESET button** (p. 181)

25 **EDITSEARCH button** (p. 31)

26 **MEMORY operation buttons***
- MEMORY PLAY button (p. 148)
- MEMORY – button (p. 148)
- MEMORY + button (p. 148)
- MEMORY MIX button (p. 128)
- MEMORY DELETE button (p. 169)
- MPEG ►II button (p. 151)
- MEMORY INDEX button (p. 150)

27 **DISPLAY button** (p. 34)

28 **MENU button** (p. 104)

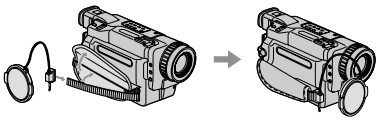
29 **SEL/PUSH EXEC dial** (p. 104)

30 **EXPOSURE button** (p. 52)

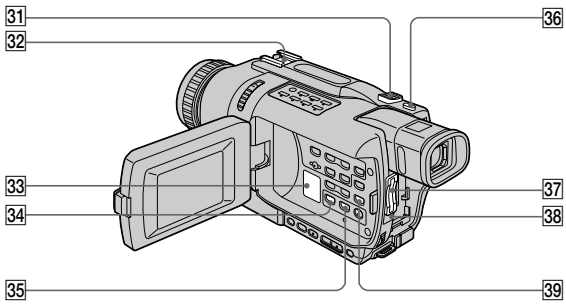
* DCR-TRV340 only

Attaching the lens cap

Attach the lens cap to the grip strap as illustrated.



Identifying parts and controls



31 **Power zoom lever** (p. 23)

32 **Intelligent accessory shoe**

33 **Speaker**

34 **PB ZOOM button** (p. 64, 164)

35 **TITLE button** (p. 57)

36 **PHOTO button** (p. 38, 122)

37 **"Memory Stick" slot*** (p. 117)

38 **Access lamp*** (p. 117)

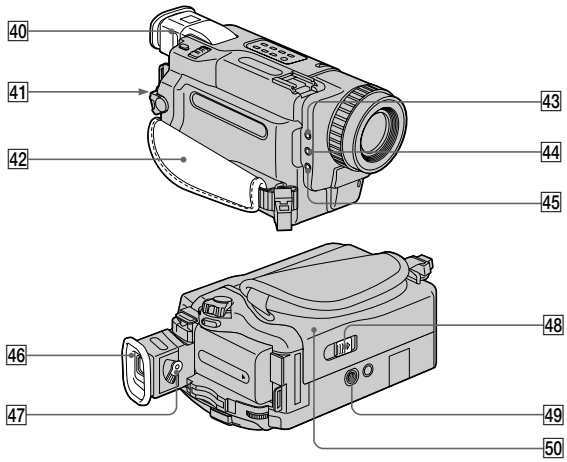
39 **END SEARCH button** (p. 31, 36)

* DCR-TRV340 only

Intelligent Accessory Shoe

Notes on the intelligent accessory shoe
- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone or printer (DCR-TRV340 only).
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.

Identifying parts and controls



40 **Viewfinder** (p. 24)

41 **LOCK switch*** (p. 20)

42 **Grip strap**

43 **MIC (PLUG IN POWER) jack**
Connect an external microphone (optional). This jack also accepts a "plug-in-power" microphone.

44 **(headphones) jack**

45 **LANC jack**
LANC stands for Local Application Control Bus System. The LANC control jack is used for controlling the tape transport of video equipment and other peripherals connected to the video equipment. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

46 **Eyecup**

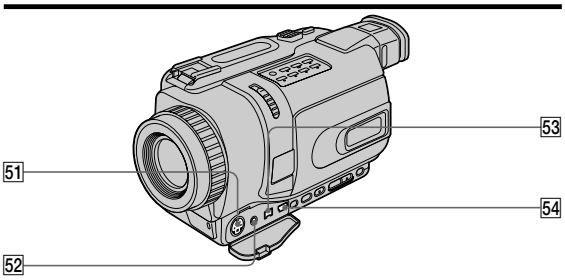
47 **Viewfinder lens adjustment lever** (p. 24)

48 **OPEN/EJECT switch** (p. 19)

49 **Tripod receptacle** (base)
Make sure that the length of the tripod screw is less than 5.5 mm (7/32 inch). Otherwise, you cannot attach the tripod securely and the screw may damage your camcorder.

50 **Cassette compartment** (p. 19)

* DCR-TRV340 only



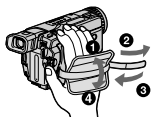
51 **S VIDEO jack** (p. 37, 70, 134)

52 **AUDIO/VIDEO jack** (p. 37, 70, 134)

53 **DV IN/OUT jack** (p. 71, 135)
The DV IN / OUT jack is i.LINK compatible.

54 **(USB) jack** (p. 96, 155)

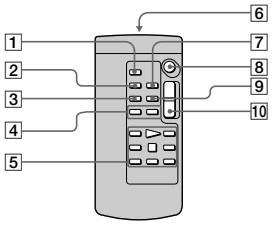
Fastening the grip strap



Fasten the grip strap firmly.

Remote Commander

The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.



1 **PHOTO button** (p. 38, 122)

2 **DISPLAY button** (p. 34)

3 **SEARCH MODE button** (p. 67, 68)

4 **⏮ / ⏭ buttons** (p. 67, 68)

5 **Tape transport buttons** (p. 35)

6 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the camcorder.

7 **ZERO SET MEMORY button** (p. 66)

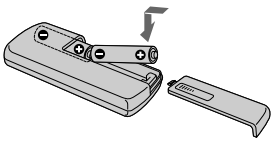
8 **START/STOP button** (p. 20)

9 **DATA CODE button** (p. 34)

10 **Power zoom button** (p. 23)

To prepare the Remote Commander

Insert 2 size AA (R6) batteries by matching the + and – on the batteries to the + and – in the battery compartment.

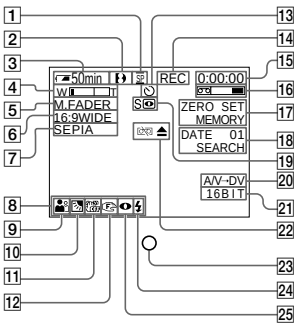


Notes on the Remote Commander

- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the Commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the Commander mode VTR 2, we recommend changing the Commander mode or covering the sensor of the VCR with black paper.

Operation indicators

LCD screen and Viewfinder



Display window

1 **Recording mode** (p. 20) **/Mirror mode** (p. 25)

2 **Format** (p. 185)
Hi8 or 8 indicator appears.

3 **Remaining battery time** (p. 26, 34)

4 **Zoom** (p. 23)**/Exposure** (p. 52)

5 **Fader** (p. 44)**/Digital effect** (p. 48, 63)

6 **Wide mode** (p. 41)**/FRAME indicator** (DCR-TRV340 only) (p. 122)

7 **Picture effect** (p. 46, 62)

8 **Volume** (p. 33)**/Data code** (p. 34)

9 **PROGRAM AE** (p. 51)

10 **Backlight** (p. 27)

11 **SteadyShot off** (p. 106)

12 **Manual focusing** (p. 53)

13 **Self-timer** (DCR-TRV340 only) (p. 30, 40, 126)

14 **STBY/REC** (p. 20)**/Video control mode** (p. 35)

15 **Tape counter** (p. 26)**/Time code** (p. 26)**/Self-diagnosis display** (p. 182)**/Tape Photo recording** (p. 38)

16 **Remaining tape** (p. 26)

17 **ZERO SET MEMORY** (p. 66)

18 **Search mode** (p. 31, 67, 68)

19 **NIGHTSHOT** (p. 28)**/SUPER NIGHTSHOT** (p. 28)**/COLOR SLOW SHUTTER** (p. 28)

20 **A/V → DV** (p. 87)**/DV IN** (p. 90)

21 **Audio mode** (p. 111)

22 **Warning** (p. 183)

23 **Recording lamp** (p. 20)
This indicator appears in the viewfinder.

24 **Video flash ready** (p. 105)
This indicator appears when you use the video flash light (optional).

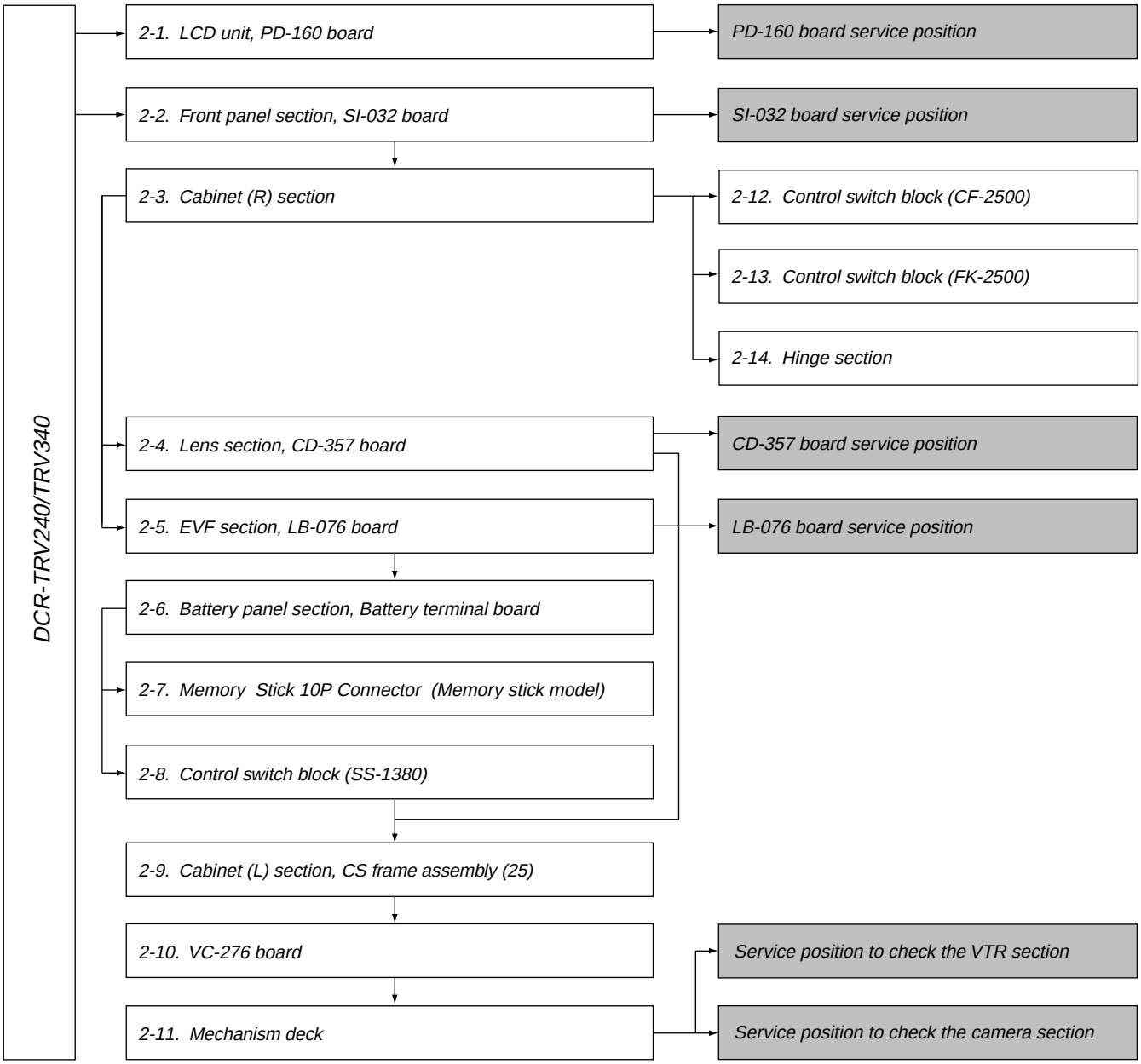
25 **Video flash mode** (p. 105)
This indicator appears when you use the video flash light (optional).

26 **Tape counter** (p. 26)**/Time code** (p. 26)**/Self-diagnosis display** (p. 182)**/Remaining battery time** (p. 13)

27 **FULL charge** (p. 13)

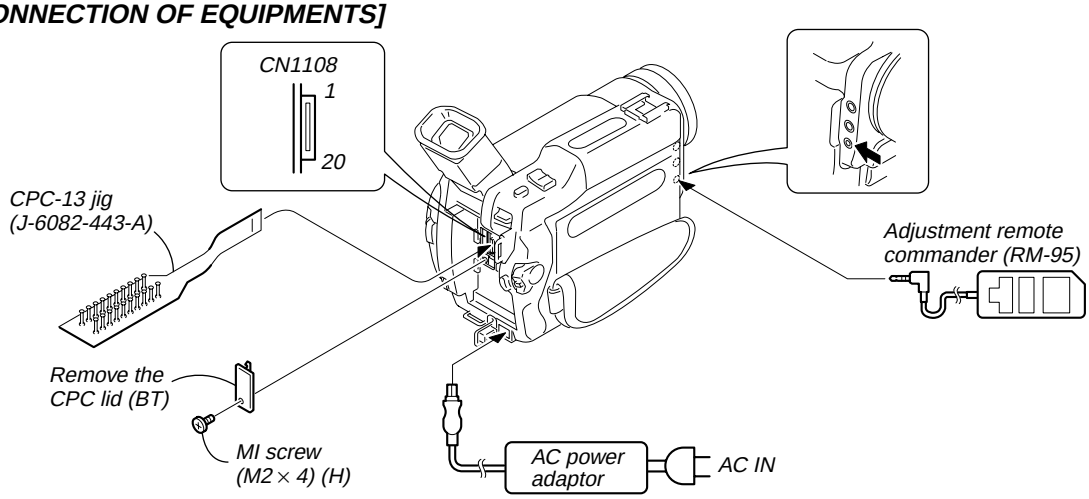
SECTION 2
DISASSEMBLY

The following flowchart shows the disassembly procedure.


DCR-TRV240/TRV340
2-1. LCD unit, PD-160 board
PD-160 board service position
2-2. Front panel section, SI-032 board
SI-032 board service position
2-3. Cabinet (R) section
2-12. Control switch block (CF-2500)
2-13. Control switch block (FK-2500)
2-14. Hinge section
2-4. Lens section, CD-357 board
CD-357 board service position
2-5. EVF section, LB-076 board
LB-076 board service position
2-6. Battery panel section, Battery terminal board
2-7. Memory Stick 10P Connector (Memory stick model)
2-8. Control switch block (SS-1380)
2-9. Cabinet (L) section, CS frame assembly (25)
2-10. VC-276 board
Service position to check the VTR section
2-11. Mechanism deck
Service position to check the camera section

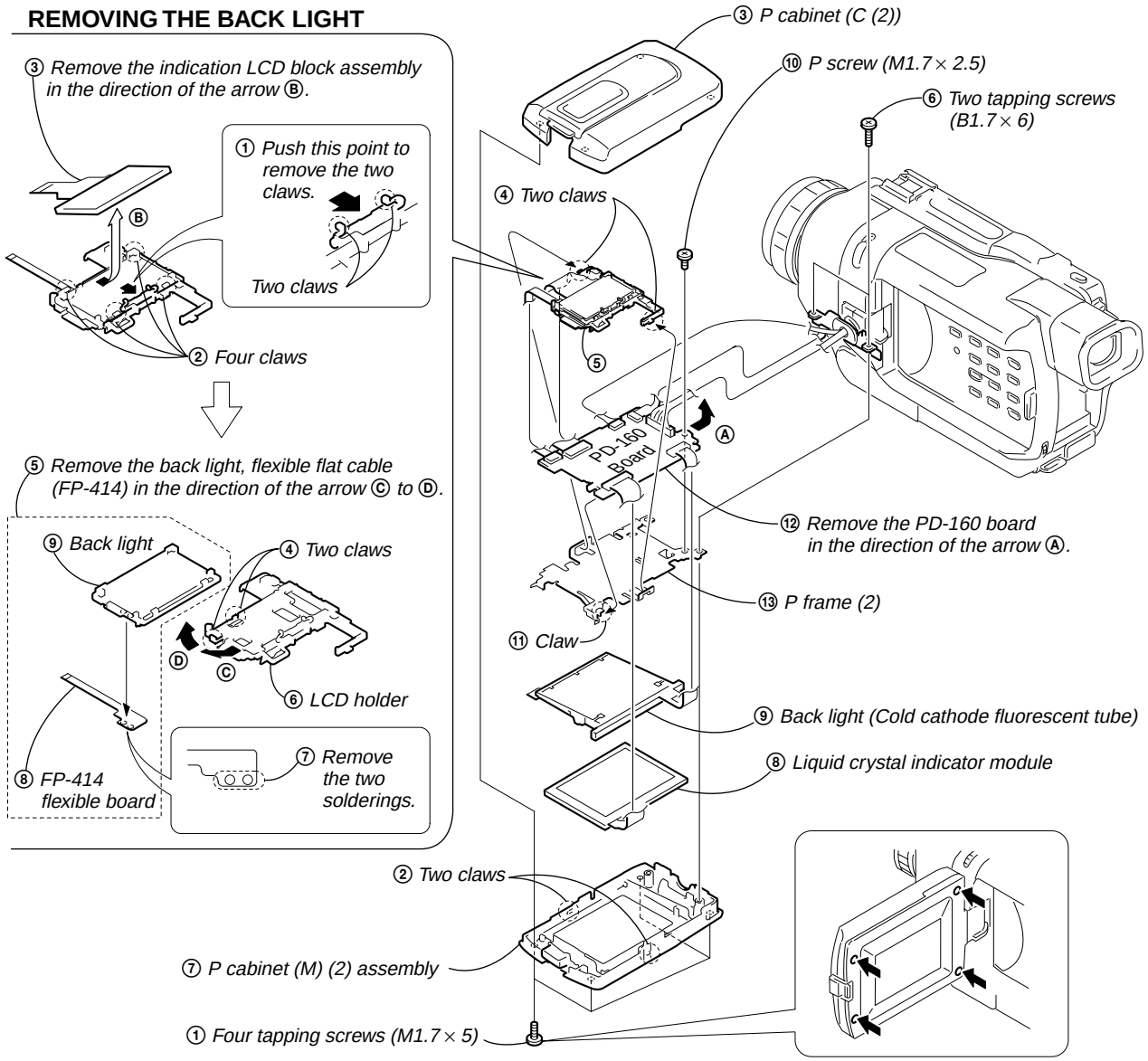
Memory stick model : DCR-TRV340

[CONNECTION OF EQUIPMENTS]

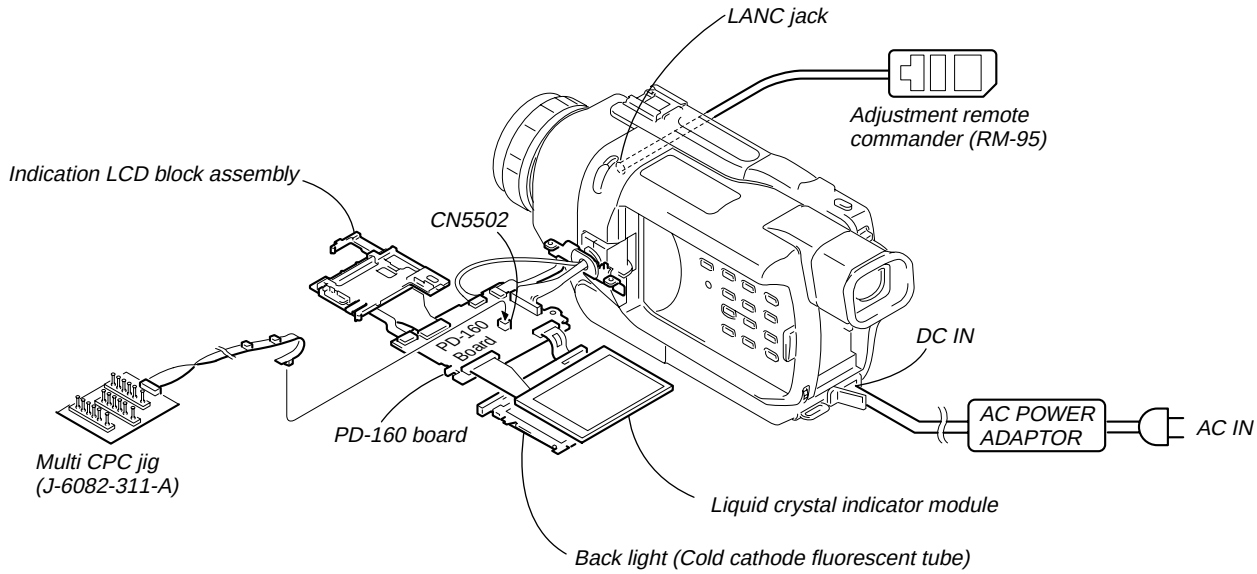


NOTE: Follow the disassembly procedure in the numerical order given.

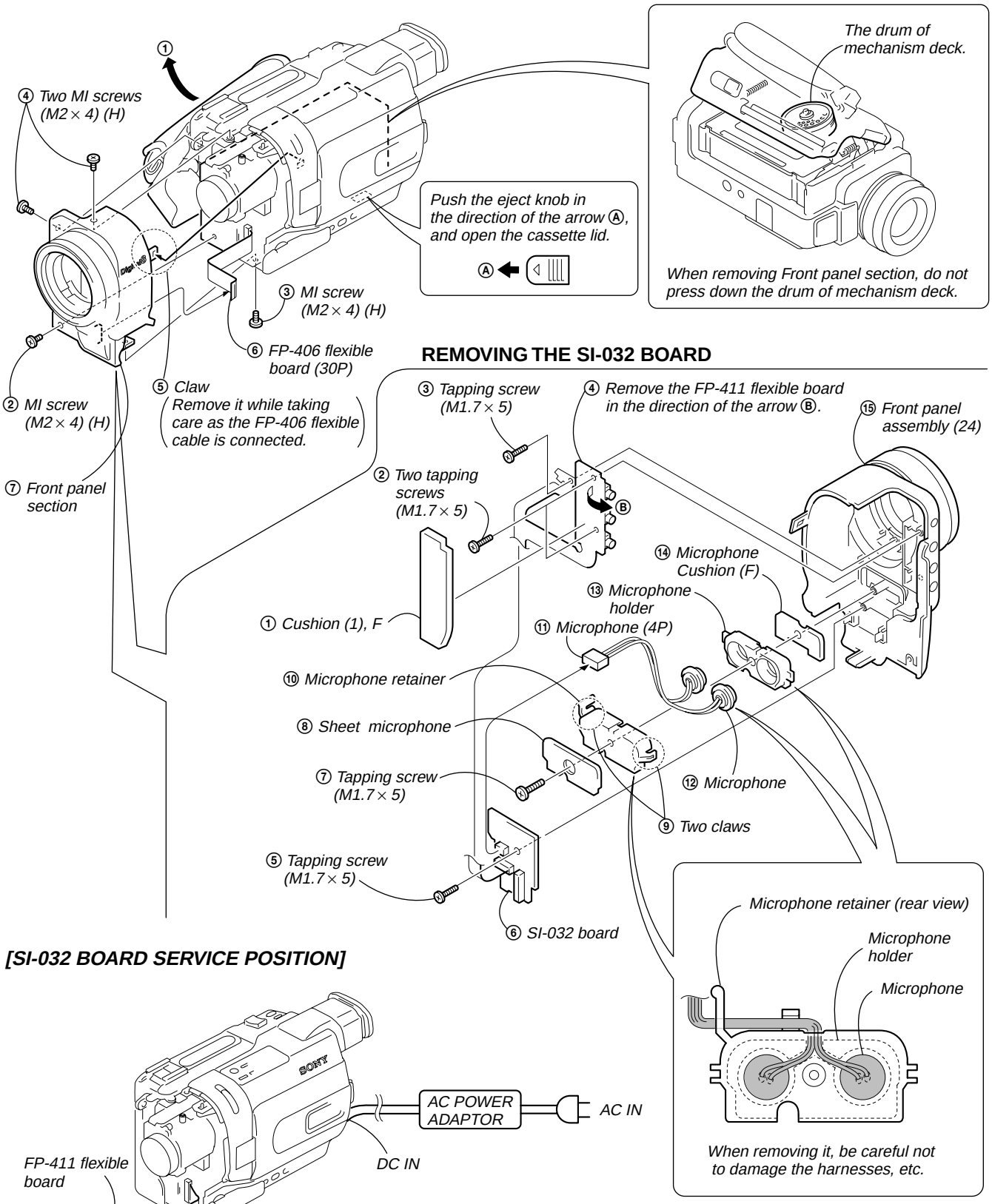
2-1. LCD UNIT, PD-160 BOARD


REMOVING THE BACK LIGHT
③ Remove the indication LCD block assembly in the direction of the arrow Ⓑ.
① Push this point to remove the two claws.
Two claws
② Four claws
⑤ Remove the back light, flexible flat cable (FP-414) in the direction of the arrow Ⓒ to Ⓓ.
⑨ Back light
④ Two claws
⑥ LCD holder
⑧ FP-414 flexible board
⑦ Remove the two solderings.
③ P cabinet (C (2))
⑩ P screw (M1.7× 2.5)
⑥ Two tapping screws (B1.7× 6)
④ Two claws
⑤
PD-160 Board
Ⓐ
⑫ Remove the PD-160 board in the direction of the arrow Ⓐ.
⑬ P frame (2)
⑪ Claw
⑨ Back light (Cold cathode fluorescent tube)
⑧ Liquid crystal indicator module
② Two claws
⑦ P cabinet (M) (2) assembly
① Four tapping screws (M1.7× 5)

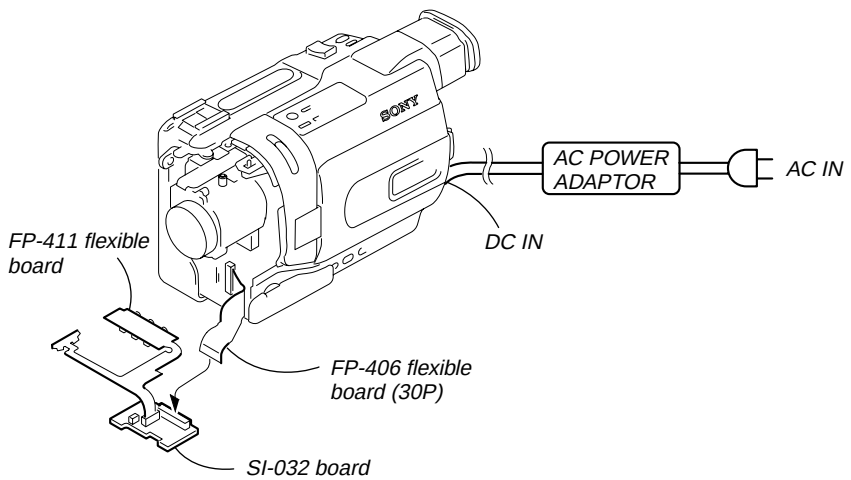
[PD-160 BOARD SERVICE POSITION]



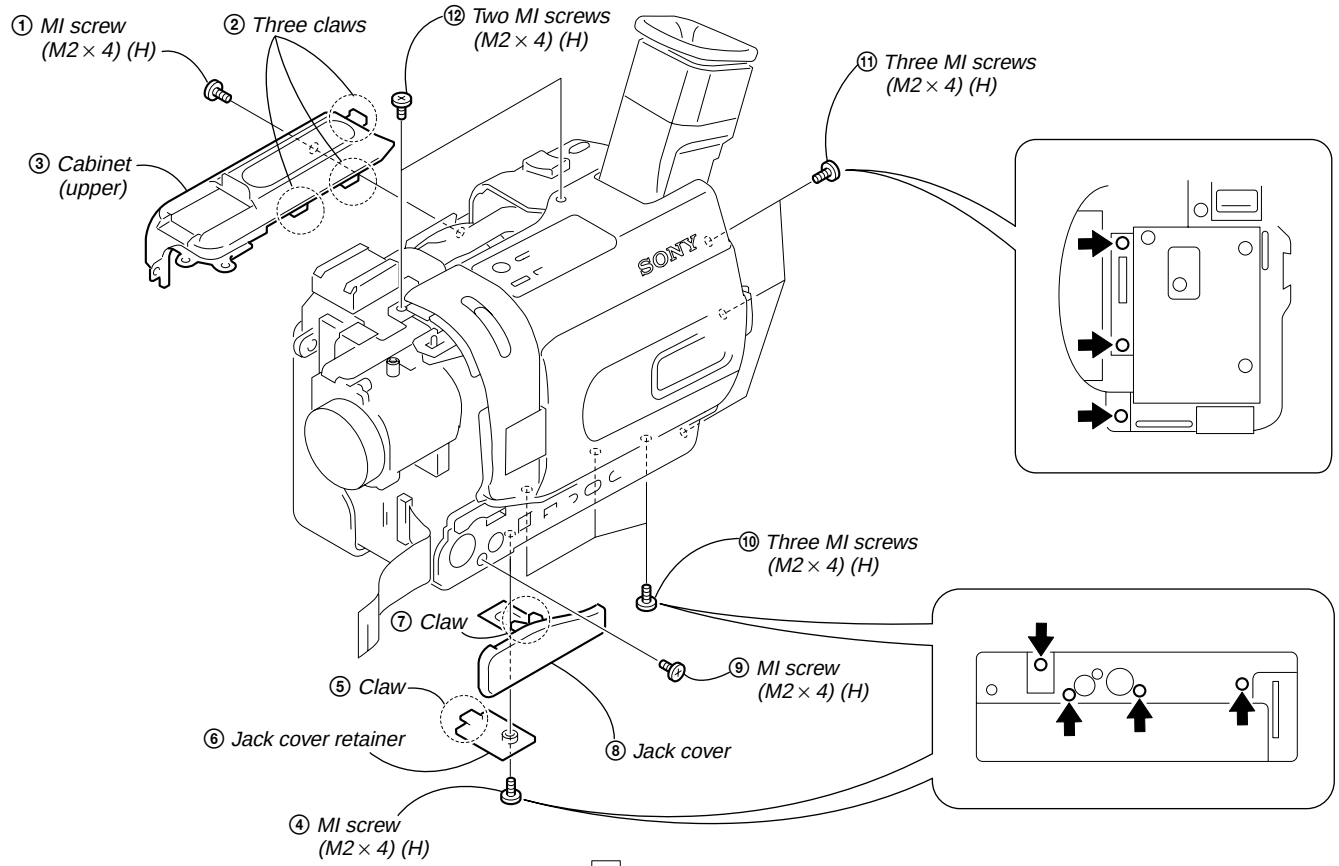
2-2. FRONT PANEL SECTION, SI-032 BOARD

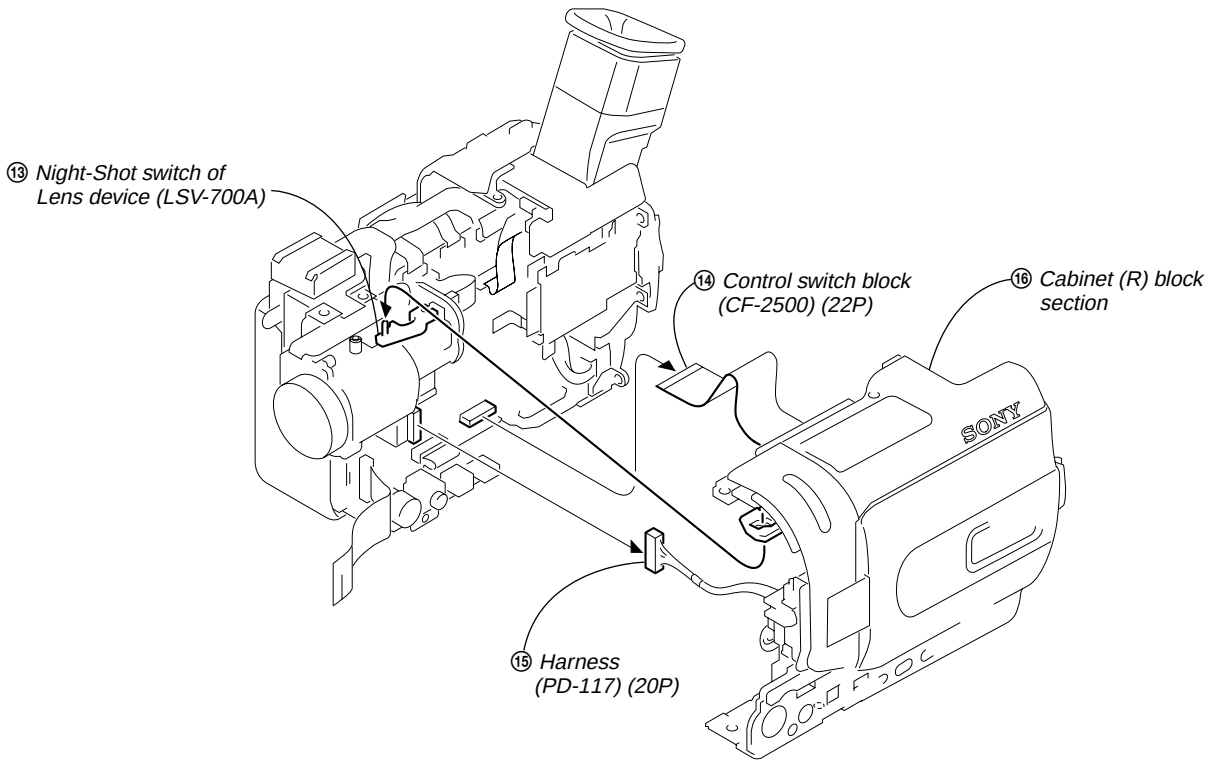

① ④ Two MI screws (M2 × 4) (H)
③ MI screw (M2 × 4) (H)
⑥ FP-406 flexible board (30P)
② MI screw (M2 × 4) (H)
⑤ Claw
Remove it while taking care as the FP-406 flexible cable is connected.
⑦ Front panel section
Push the eject knob in the direction of the arrow Ⓐ, and open the cassette lid.
Ⓐ
The drum of mechanism deck.
When removing Front panel section, do not press down the drum of mechanism deck.
REMOVING THE SI-032 BOARD
③ Tapping screw (M1.7 × 5)
④ Remove the FP-411 flexible board in the direction of the arrow Ⓑ.
⑮ Front panel assembly (24)
② Two tapping screws (M1.7 × 5)
Ⓑ
⑭ Microphone Cushion (F)
⑬ Microphone holder
① Cushion (1), F
⑪ Microphone (4P)
⑩ Microphone retainer
⑧ Sheet microphone
⑦ Tapping screw (M1.7 × 5)
⑫ Microphone
⑨ Two claws
⑤ Tapping screw (M1.7 × 5)
⑥ SI-032 board
Microphone retainer (rear view)
Microphone holder
Microphone
When removing it, be careful not to damage the harnesses, etc.

[SI-032 BOARD SERVICE POSITION]



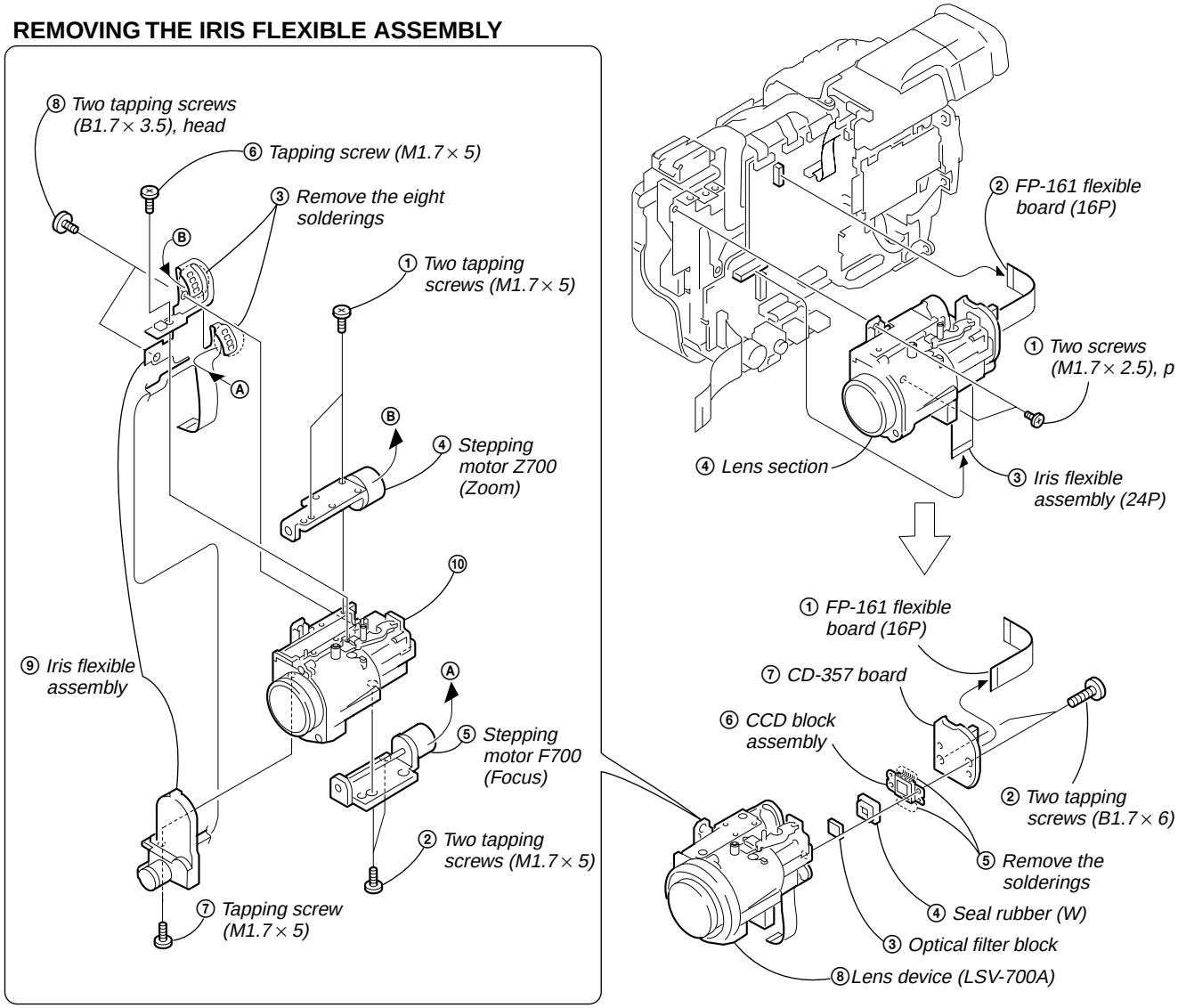
2-3. CABINET (R) SECTION


① MI screw (M2 × 4) (H)
② Three claws
⑫ Two MI screws (M2 × 4) (H)
⑪ Three MI screws (M2 × 4) (H)
③ Cabinet (upper)
⑩ Three MI screws (M2 × 4) (H)
⑦ Claw
⑨ MI screw (M2 × 4) (H)
⑤ Claw
⑥ Jack cover retainer
⑧ Jack cover
④ MI screw (M2 × 4) (H)

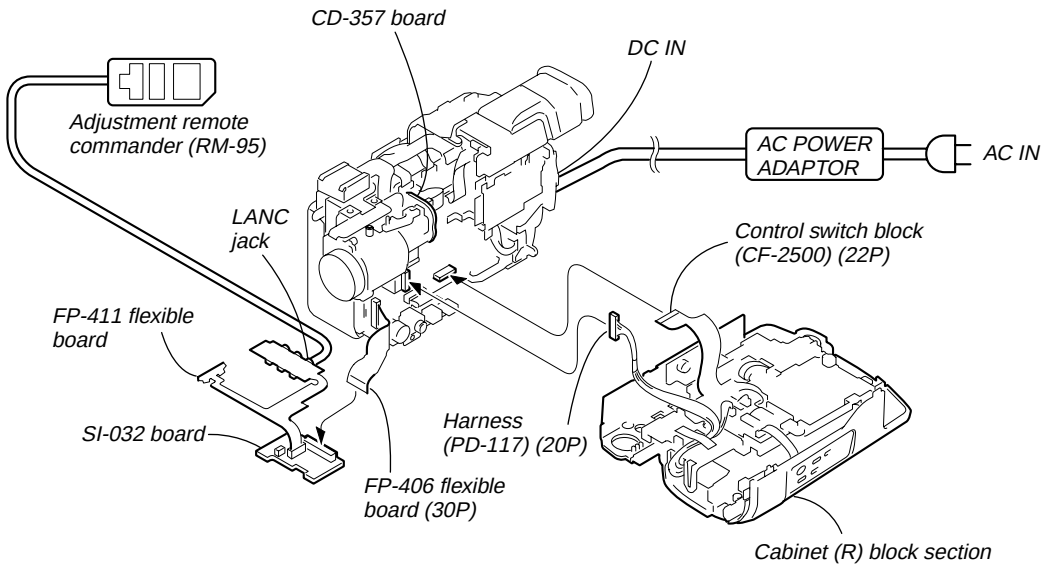

⑬ Night-Shot switch of Lens device (LSV-700A)
⑭ Control switch block (CF-2500) (22P)
⑯ Cabinet (R) block section
⑮ Harness (PD-117) (20P)

2-4. LENS SECTION, CD-357 BOARD

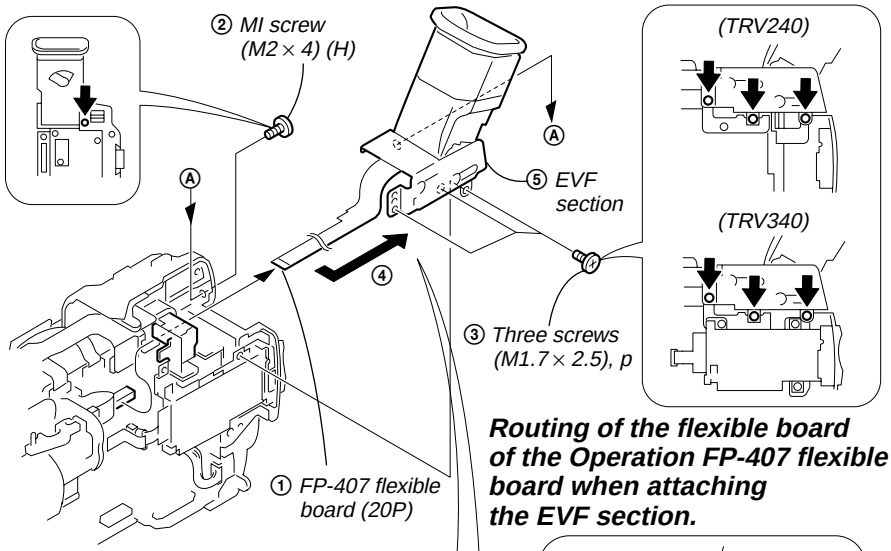
REMOVING THE IRIS FLEXIBLE ASSEMBLY


⑧ Two tapping screws (B1.7 × 3.5), head
⑥ Tapping screw (M1.7 × 5)
③ Remove the eight solderings
① Two tapping screws (M1.7 × 5)
④ Stepping motor Z700 (Zoom)
⑩
⑨ Iris flexible assembly
⑤ Stepping motor F700 (Focus)
② Two tapping screws (M1.7 × 5)
⑦ Tapping screw (M1.7 × 5)
② FP-161 flexible board (16P)
① Two screws (M1.7 × 2.5), p
④ Lens section
③ Iris flexible assembly (24P)
① FP-161 flexible board (16P)
⑦ CD-357 board
⑥ CCD block assembly
② Two tapping screws (B1.7 × 6)
⑤ Remove the solderings
④ Seal rubber (W)
③ Optical filter block
⑧ Lens device (LSV-700A)

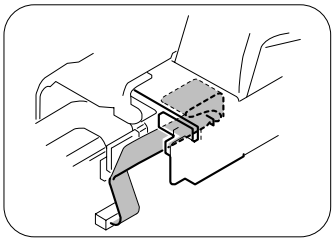
[CD-357 BOARD SERVICE POSITION]



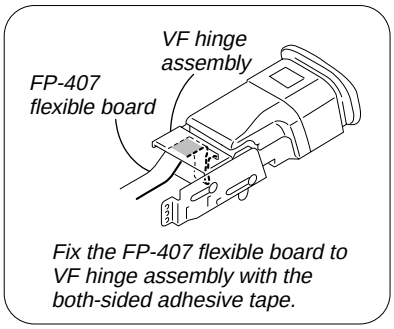
2-5. EVF SECTION, LB-076 BOARD



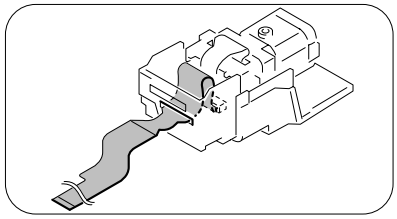
Routing of the flexible board of the Operation FP-407 flexible board when attaching the EVF section.



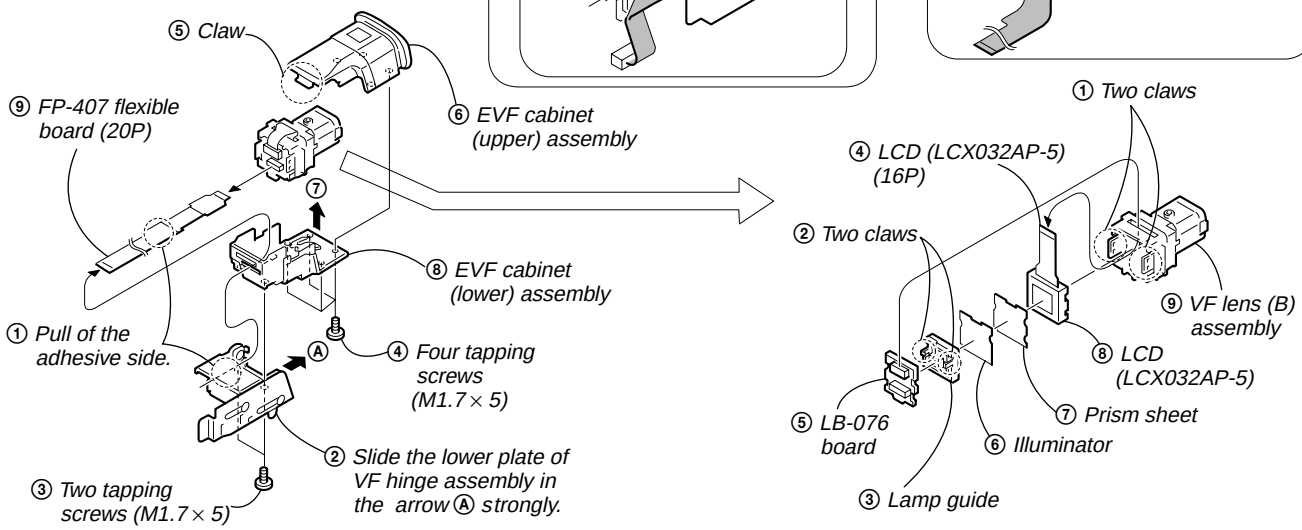
PRECAUTION WHEN ATTACHING FP-407 FLEXIBLE BOARD


VF hinge assembly
FP-407 flexible board
Fix the FP-407 flexible board to VF hinge assembly with the both-sided adhesive tape.

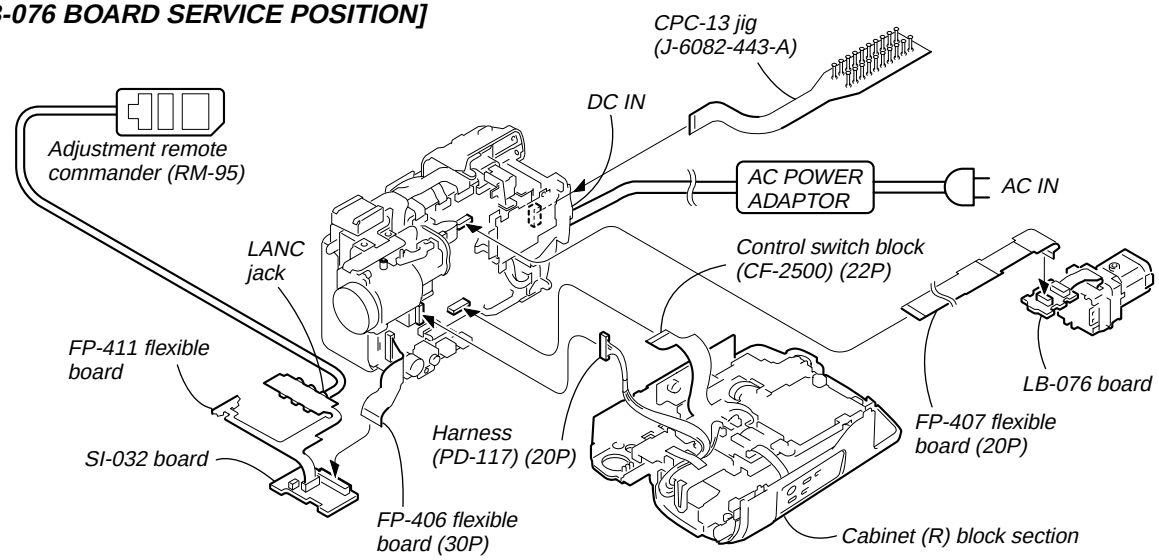
Routing of the flexible board of the Operation FP-407 flexible board when attaching the EVF cabinet (lower) assembly.



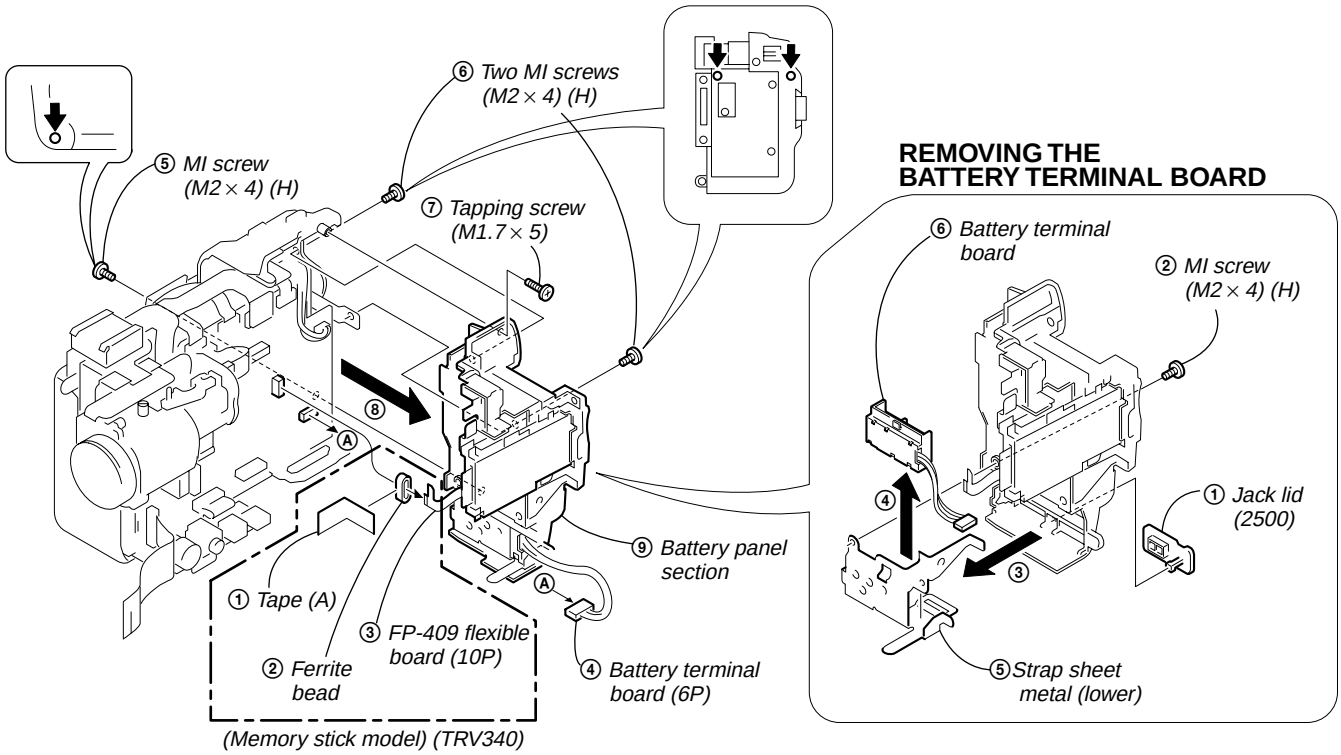
REMOVING THE LB-076 BOARD


⑤ Claw
⑥ EVF cabinet (upper) assembly
⑨ FP-407 flexible board (20P)
⑦
⑧ EVF cabinet (lower) assembly
① Pull of the adhesive side.
Ⓐ
④ Four tapping screws (M1.7 × 5)
② Slide the lower plate of VF hinge assembly in the arrow Ⓐ strongly.
③ Two tapping screws (M1.7 × 5)
① Two claws
④ LCD (LCX032AP-5) (16P)
② Two claws
⑨ VF lens (B) assembly
⑧ LCD (LCX032AP-5)
⑤ LB-076 board
⑦ Prism sheet
⑥ Illuminator
③ Lamp guide

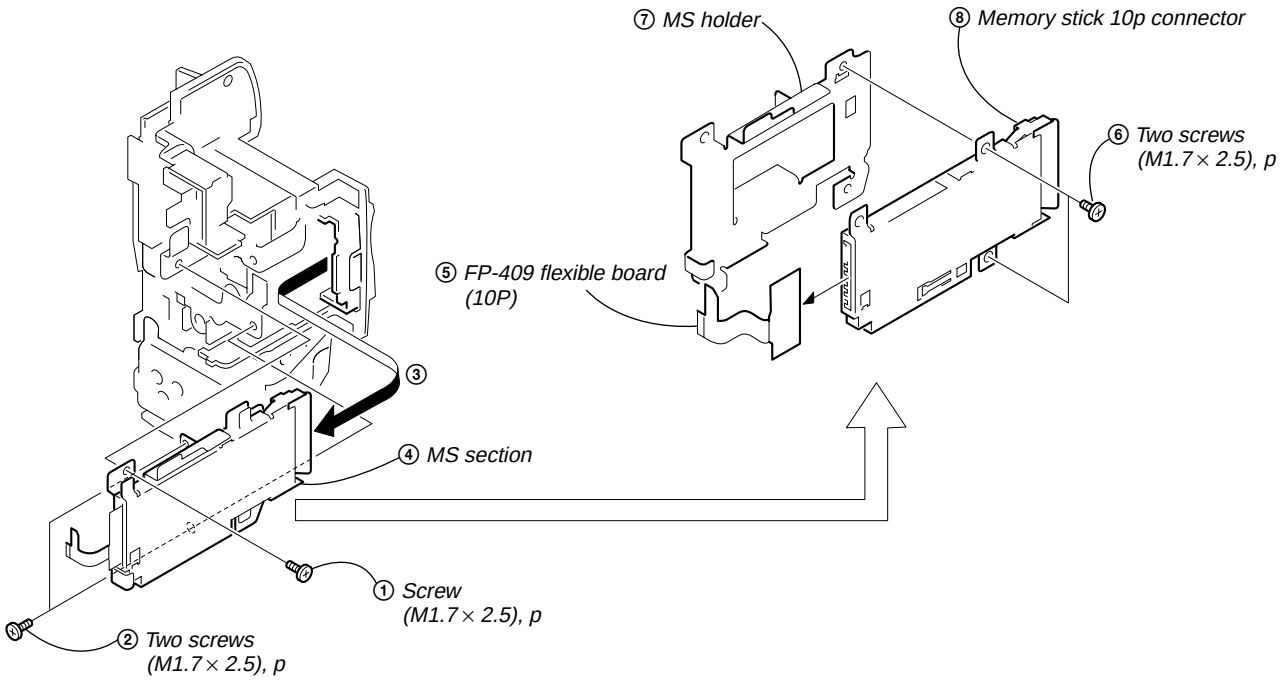
[LB-076 BOARD SERVICE POSITION]



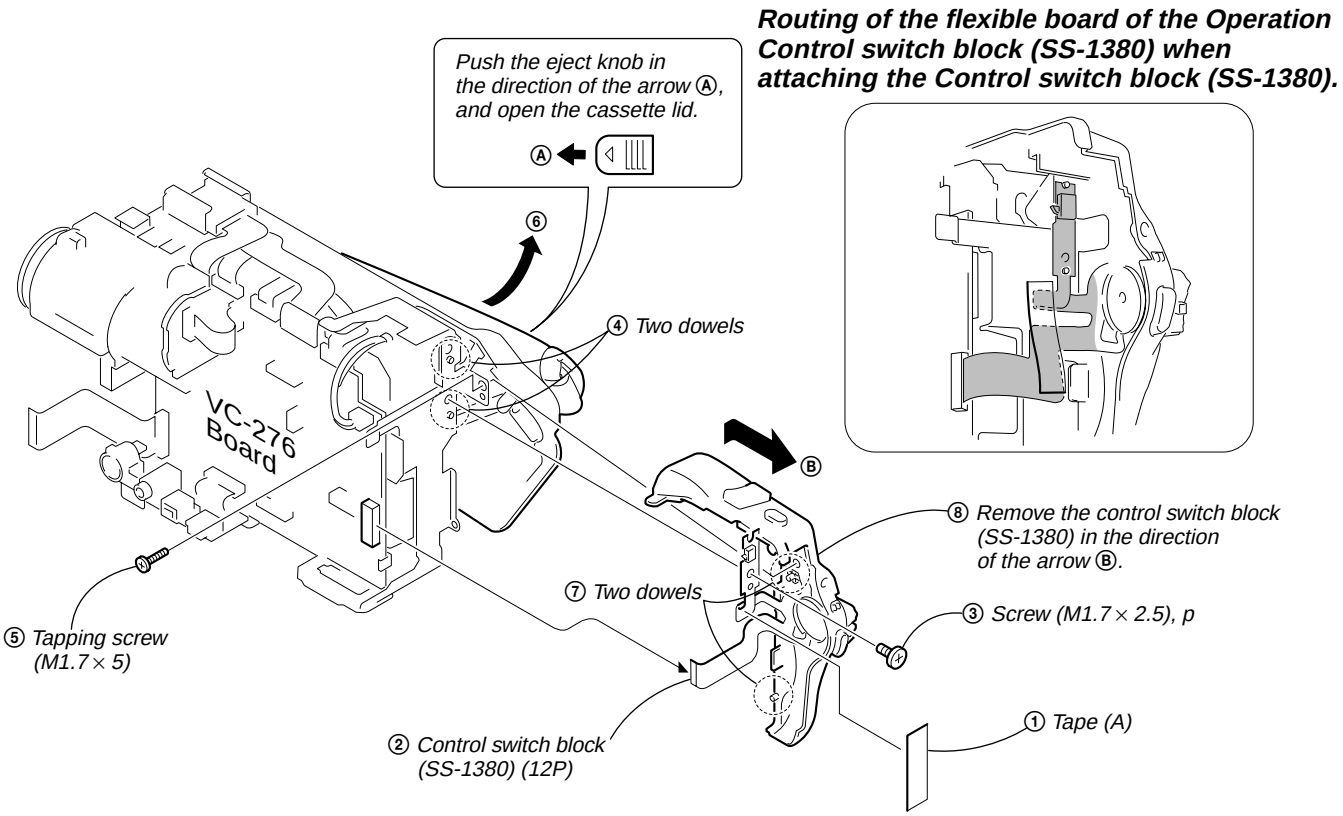
2-6. BATTERY PANEL SECTION, BATTERY TERMINAL BOARD


⑥ Two MI screws (M2 × 4) (H)
⑤ MI screw (M2 × 4) (H)
⑦ Tapping screw (M1.7 × 5)
⑧
Ⓐ
⑨ Battery panel section
① Tape (A)
③ FP-409 flexible board (10P)
② Ferrite bead
④ Battery terminal board (6P)
(Memory stick model) (TRV340)
REMOVING THE BATTERY TERMINAL BOARD
⑥ Battery terminal board
② MI screw (M2 × 4) (H)
① Jack lid (2500)
④
③
⑤ Strap sheet metal (lower)

2-7. MEMORY STICK 10P CONNECTOR (MEMORY STICK MODEL) (TRV340)


⑦ MS holder
⑧ Memory stick 10p connector
⑥ Two screws (M1.7 × 2.5), p
⑤ FP-409 flexible board (10P)
③
④ MS section
① Screw (M1.7 × 2.5), p
② Two screws (M1.7 × 2.5), p

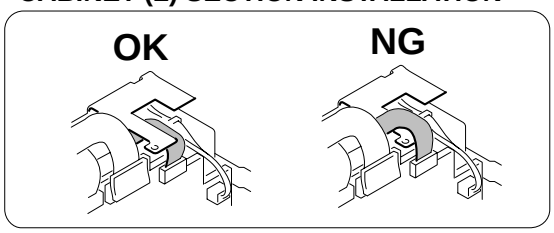
2-8. CONTROL SWITCH BLOCK (SS-1380)


Push the eject knob in the direction of the arrow Ⓐ, and open the cassette lid.
Ⓐ
⑥
④ Two dowels
VC-276 Board
Ⓑ
⑧ Remove the control switch block (SS-1380) in the direction of the arrow Ⓑ.
⑦ Two dowels
③ Screw (M1.7 × 2.5), p
⑤ Tapping screw (M1.7 × 5)
① Tape (A)
② Control switch block (SS-1380) (12P)

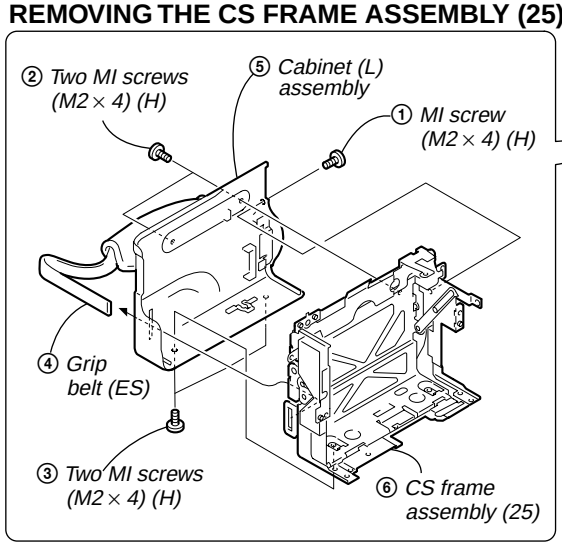
Routing of the flexible board of the Operation Control switch block (SS-1380) when attaching the Control switch block (SS-1380).

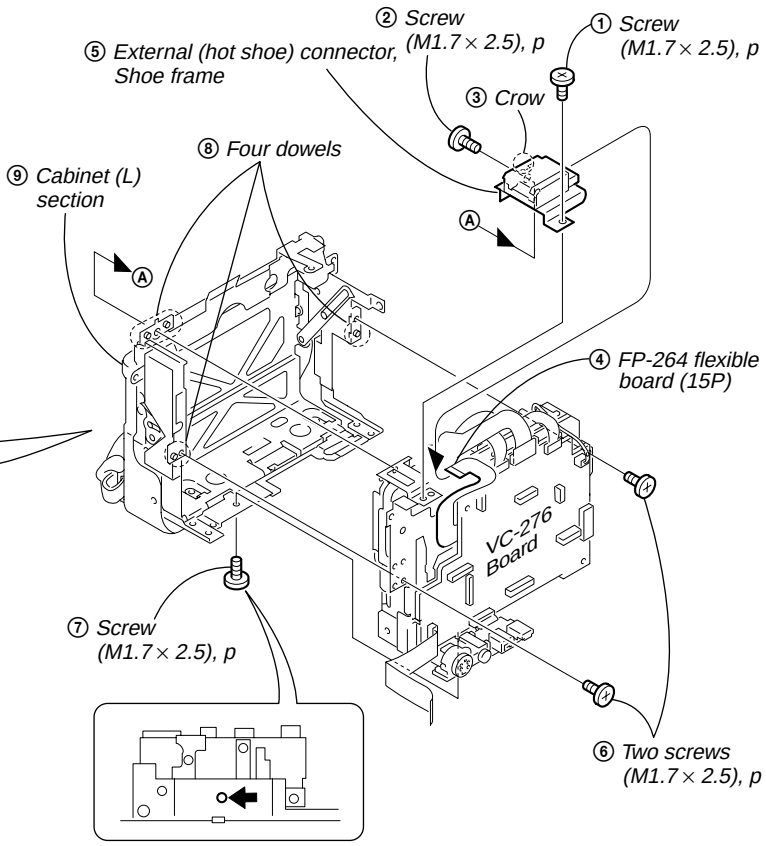
2-9. CABINET (L) SECTION, CS FRAME ASSEMBLY (25)

PRECAUTION DURING CABINET (L) SECTION INSTALLATION

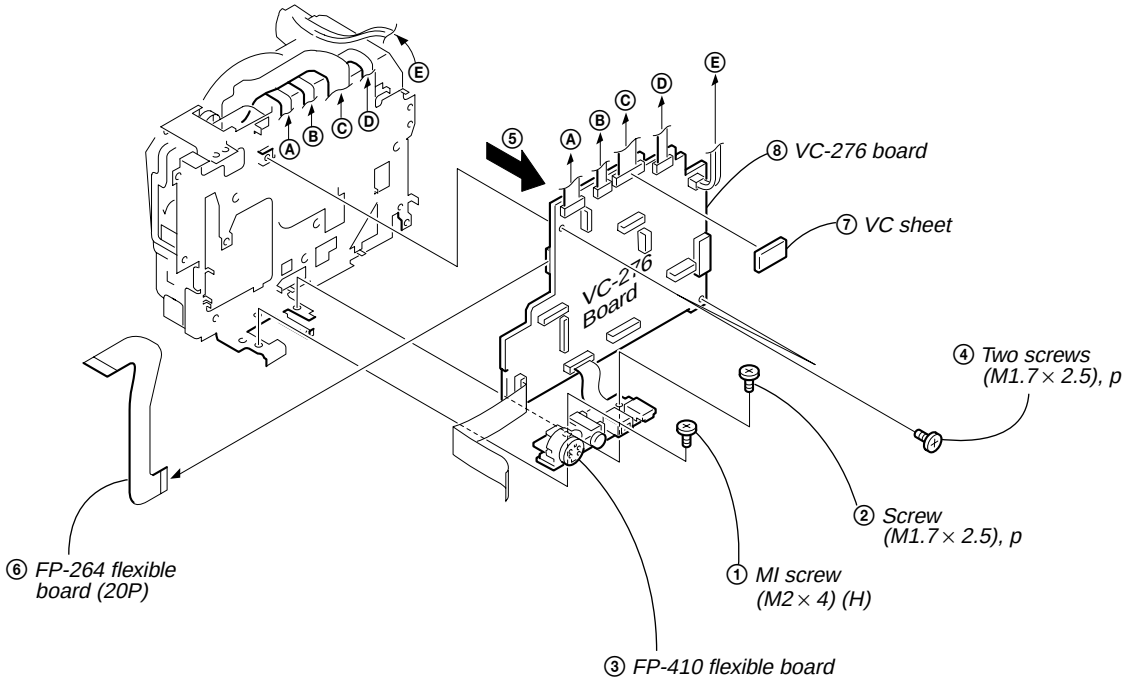


REMOVING THE CS FRAME ASSEMBLY (25)

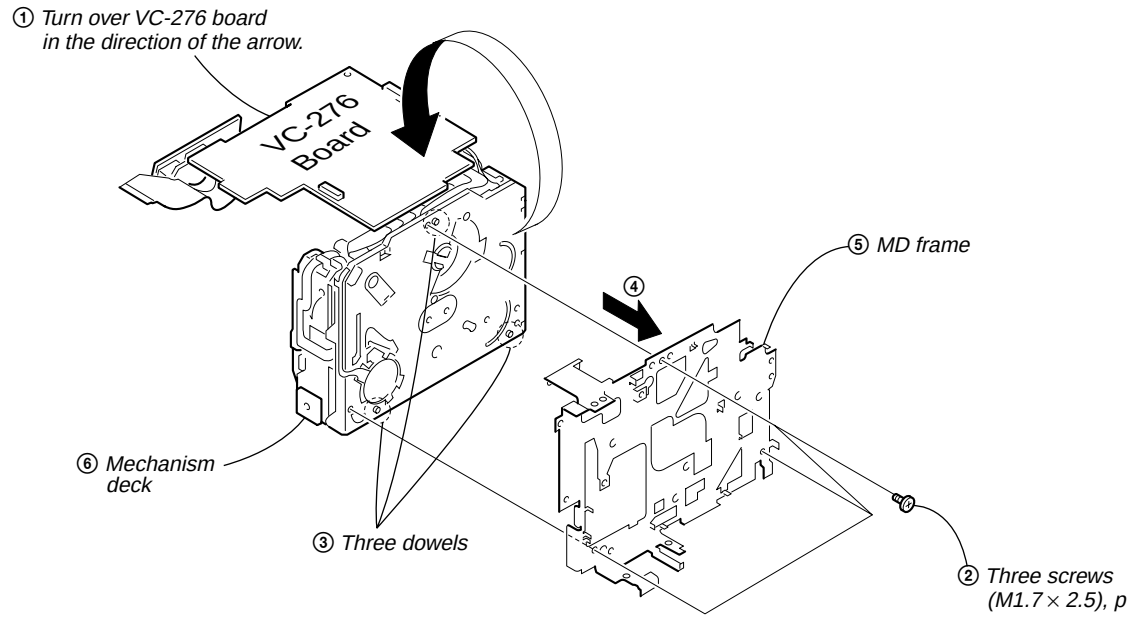



② Screw (M1.7 × 2.5), p
① Screw (M1.7 × 2.5), p
⑤ External (hot shoe) connector, Shoe frame
③ Crow
⑧ Four dowels
⑨ Cabinet (L) section
Ⓐ
Ⓐ
④ FP-264 flexible board (15P)
VC-276 Board
⑦ Screw (M1.7 × 2.5), p
⑥ Two screws (M1.7 × 2.5), p

2-10. VC-276 BOARD


⑧ VC-276 board
⑦ VC sheet
④ Two screws (M1.7× 2.5), p
② Screw (M1.7× 2.5), p
① MI screw (M2× 4) (H)
③ FP-410 flexible board
⑥ FP-264 flexible board (20P)

2-11. MECHANISM DECK


① Turn over VC-276 board in the direction of the arrow.
VC-276 Board
⑤ MD frame
⑥ Mechanism deck
③ Three dowels
② Three screws (M1.7× 2.5), p

[SERVICE POSITION TO CHECK THE VTR SECTION]

Cnnection to Check the VTR Section

To check the VTR section, set the VTR to the “Forced VTR power ON” mode.
Operate the VTR functions using the adjustment remote commander (with the HOLD switch set in the OFF position).

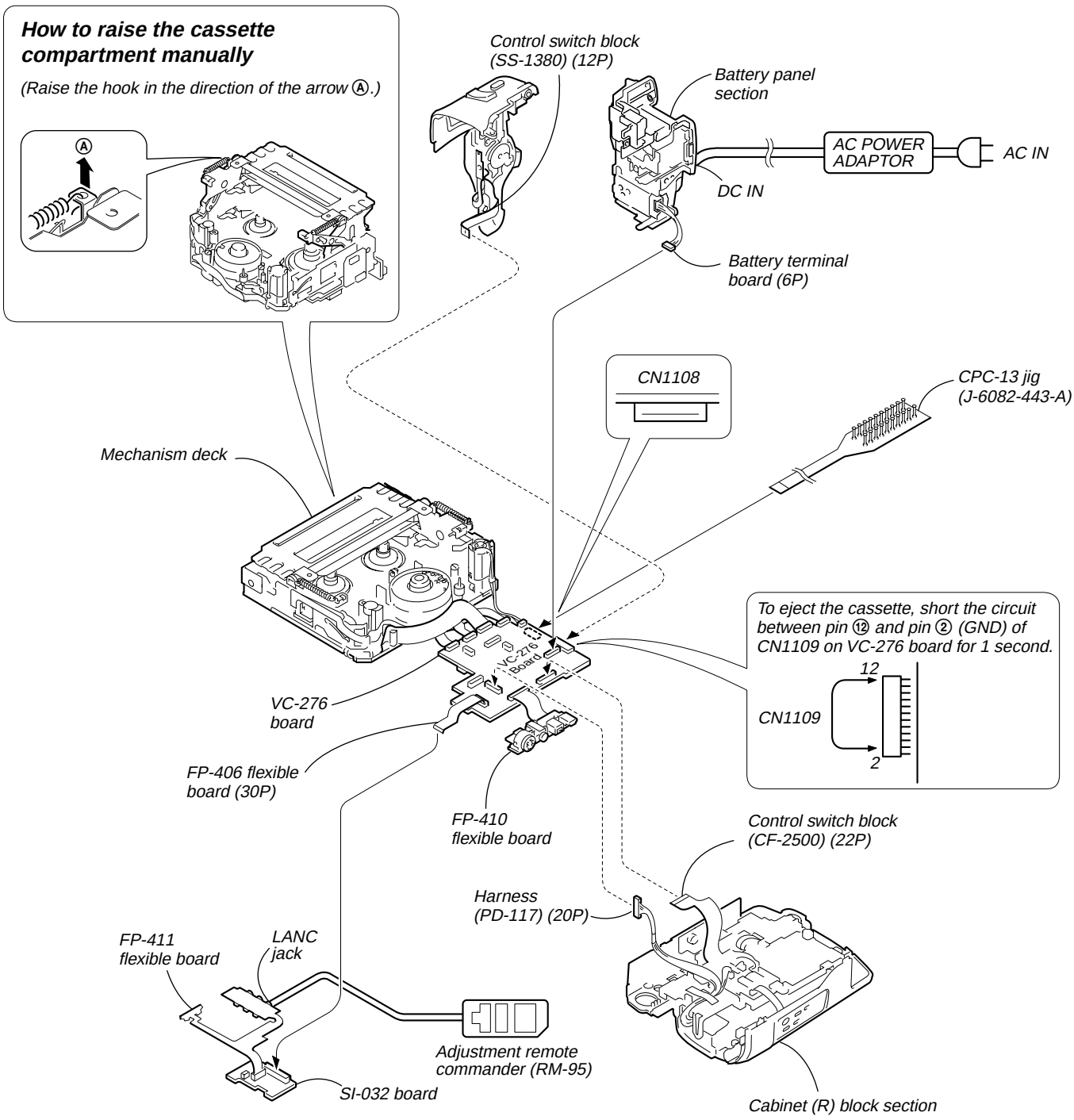
Setting the “Forced VTR Power ON” mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: D, address: 10, set data: 02 and press the PAUSE button of the adjustment remote commander.

Exiting the “Forced VTR Power ON” mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

Note : If the machine malfunctions (the operating mode changes by itself), connect the Cabinet (R) section.



[SERVICE POSITION TO CHECK THE CAMERA SECTION]

Connection to Check the Camera Section

To check the camera section, set the camera to the “Forced camera power ON” mode.
When you want to operate to zoom and focus, use the controls on the remote commander (with the HOLD switch off).

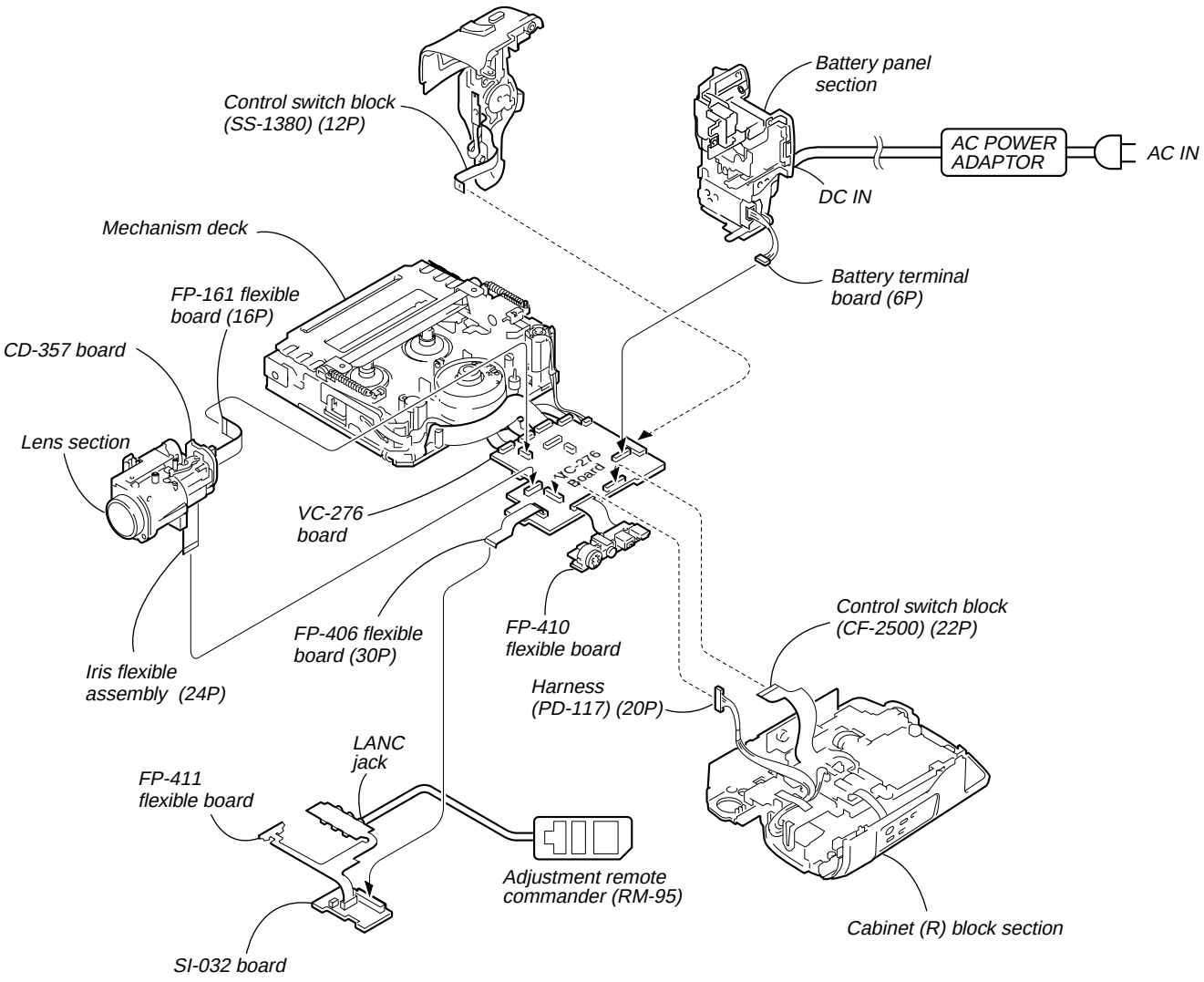
Setting the “Forced Camera Power ON” mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: D, address: 10, set data: 01 and press the PAUSE button of the adjustment remote commander.

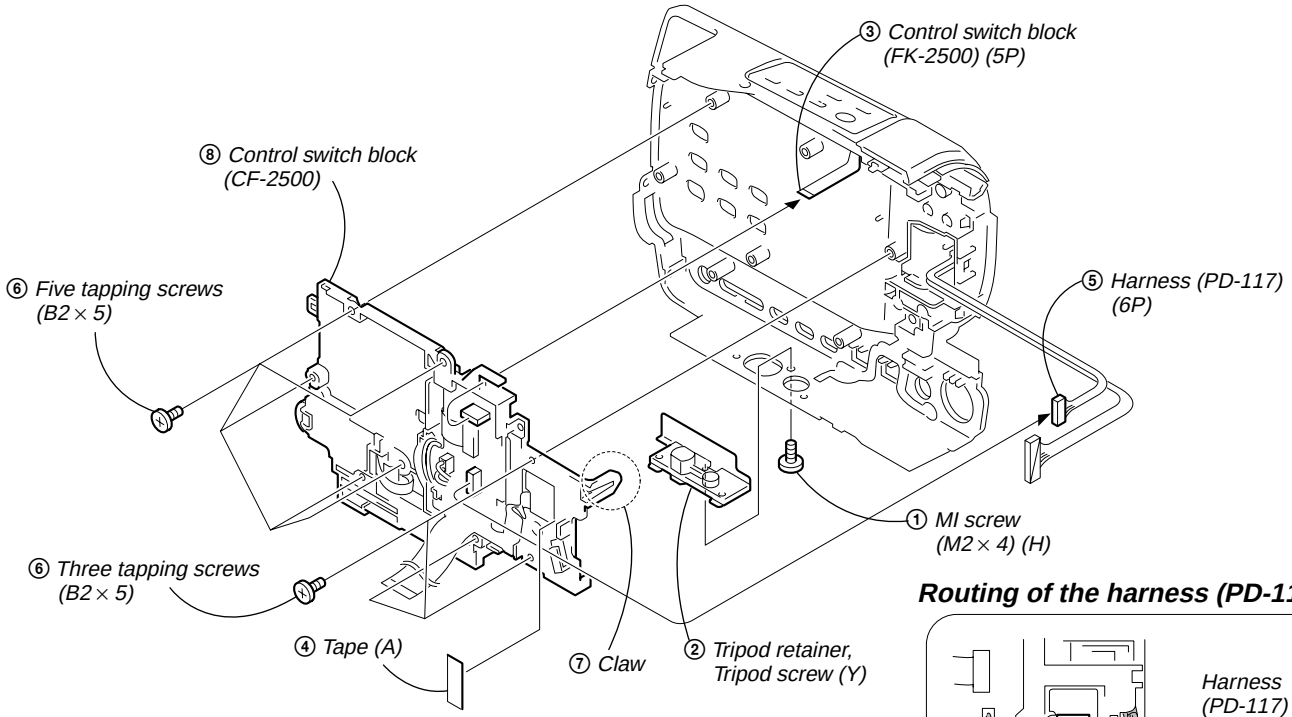
Exiting the “Forced Camera Power ON” mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page : 0, address: 01, and set data: 00.

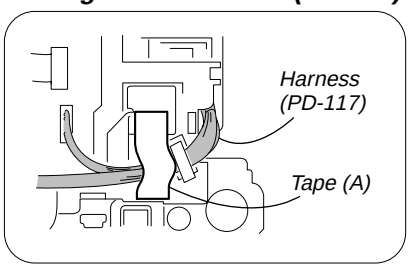
Note : If the machine malfunctions (the operating mode changes by itself), connect the Cabinet (R) section.



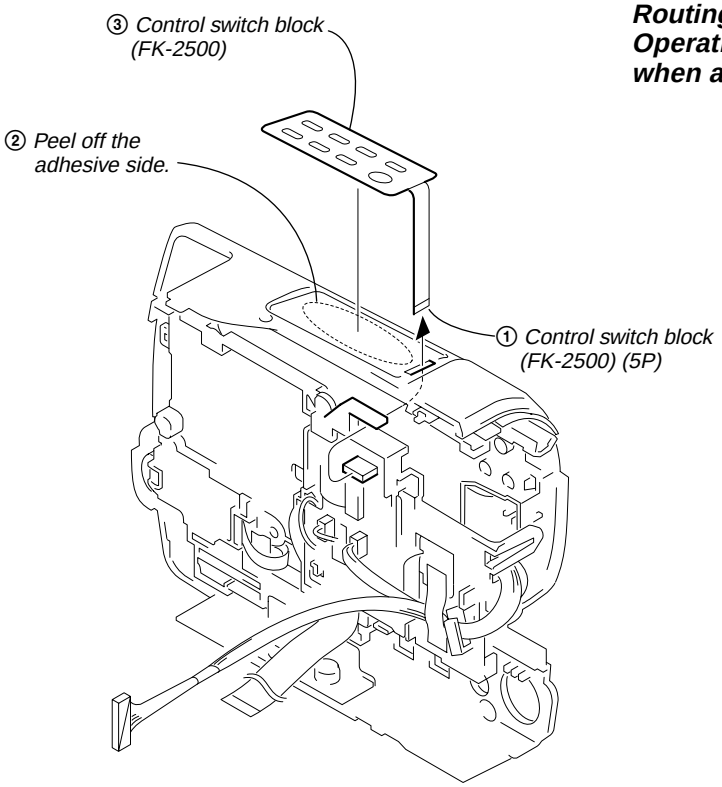
2-12. CONTROL SWITCH BLOCK (CF-2500)


③ Control switch block (FK-2500) (5P)
⑧ Control switch block (CF-2500)
⑥ Five tapping screws (B2 × 5)
⑤ Harness (PD-117) (6P)
① MI screw (M2 × 4) (H)
⑥ Three tapping screws (B2 × 5)
④ Tape (A)
⑦ Claw
② Tripod retainer, Tripod screw (Y)

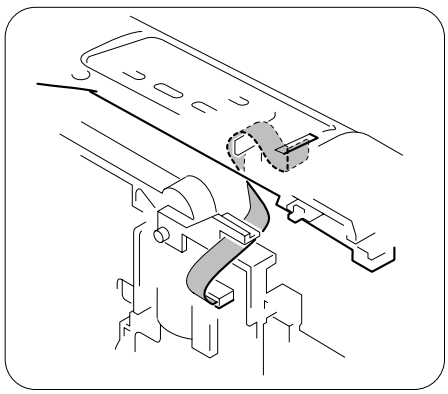
Routing of the harness (PD-117) .



2-13. CONTROL SWITCH BLOCK (FK-2500)

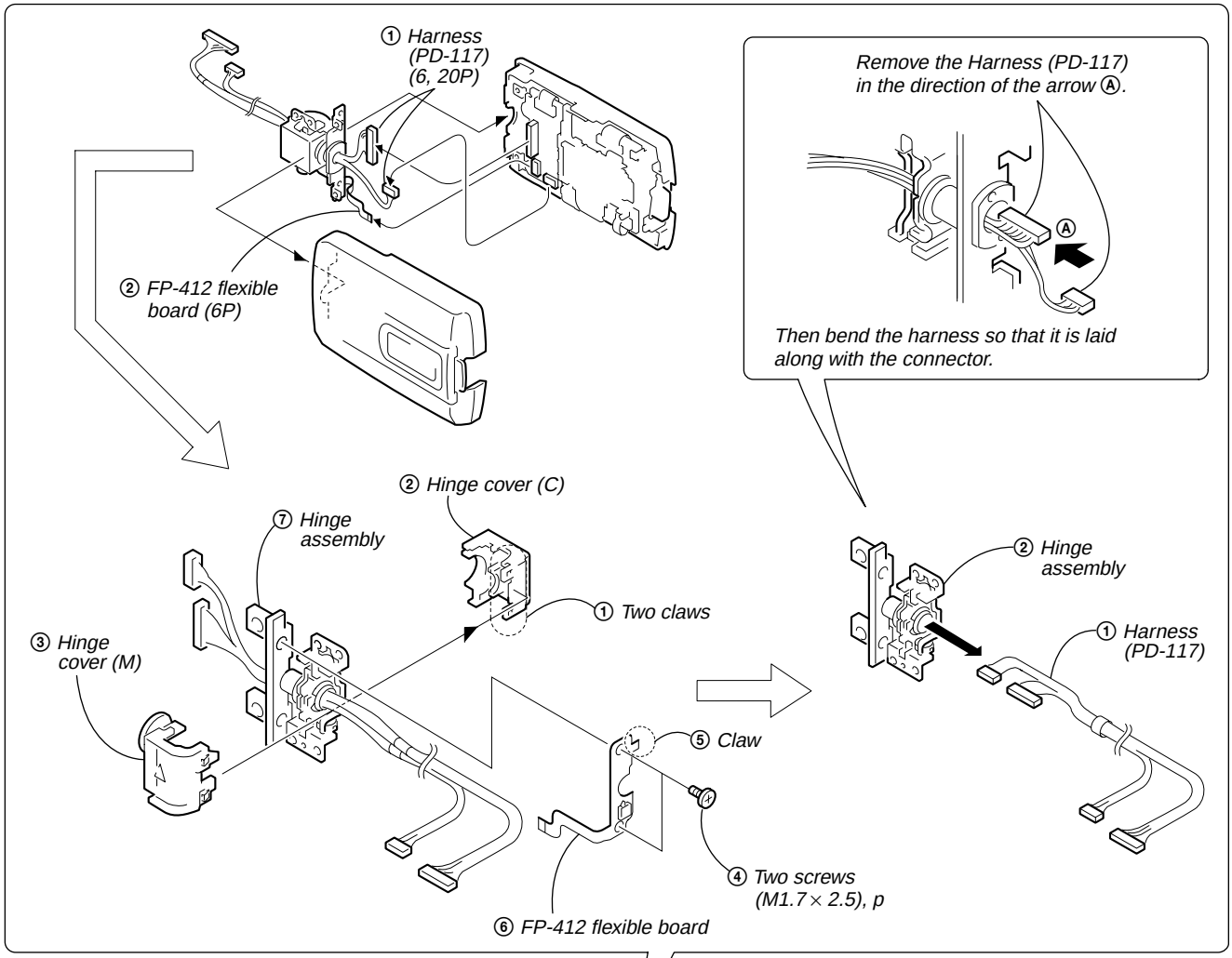


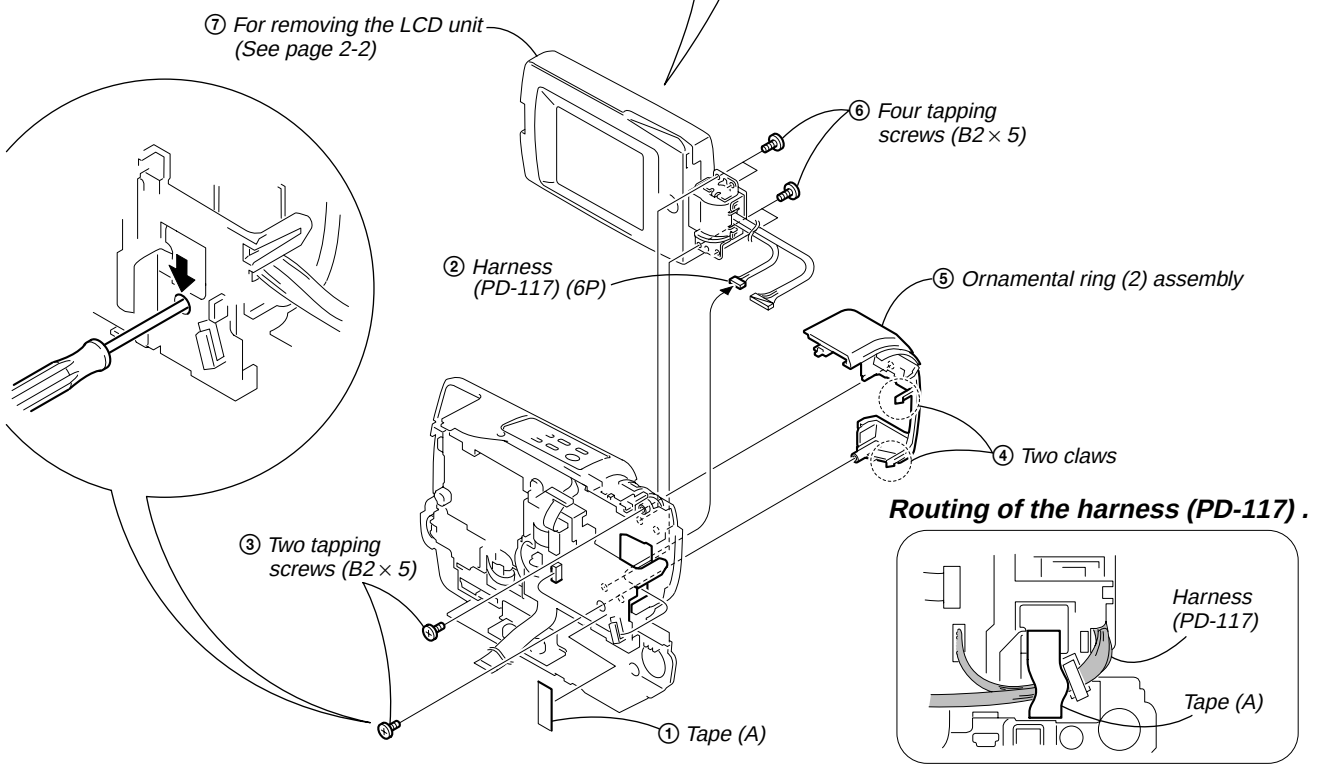
Routing of the flexible board of the Operation Control switch block (FK-2500) when attaching the Control switch block (FK-2500).



2-14. HINGE SECTION

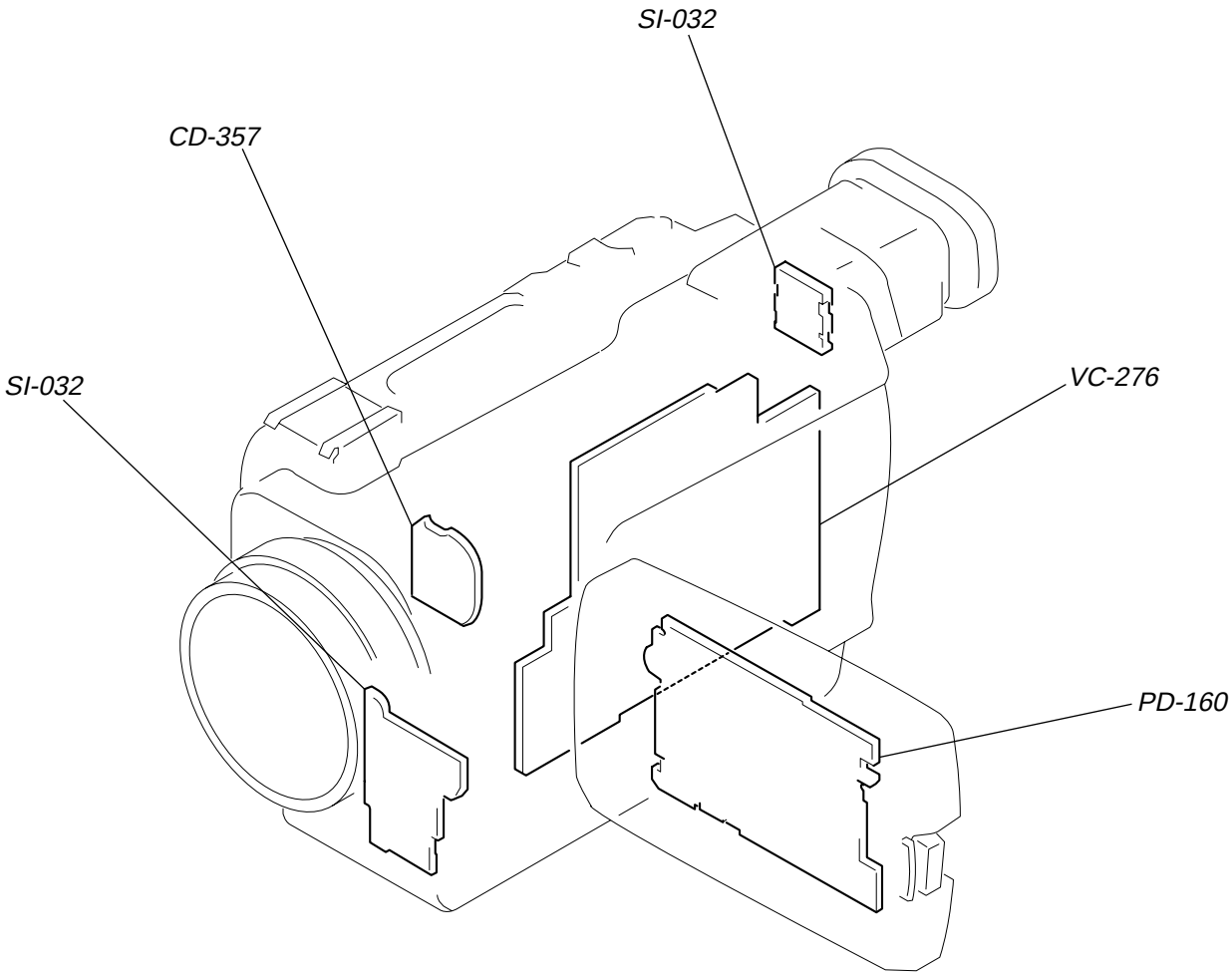
REMOVING THE HINGE ASSEMBLY


① Harness (PD-117) (6, 20P)
② FP-412 flexible board (6P)
Remove the Harness (PD-117) in the direction of the arrow Ⓐ.
Then bend the harness so that it is laid along with the connector.
② Hinge cover (C)
⑦ Hinge assembly
① Two claws
③ Hinge cover (M)
⑤ Claw
④ Two screws (M1.7 × 2.5), p
⑥ FP-412 flexible board
② Hinge assembly
① Harness (PD-117)


⑦ For removing the LCD unit (See page 2-2)
⑥ Four tapping screws (B2 × 5)
② Harness (PD-117) (6P)
⑤ Ornamental ring (2) assembly
④ Two claws
③ Two tapping screws (B2 × 5)
① Tape (A)

Routing of the harness (PD-117) .

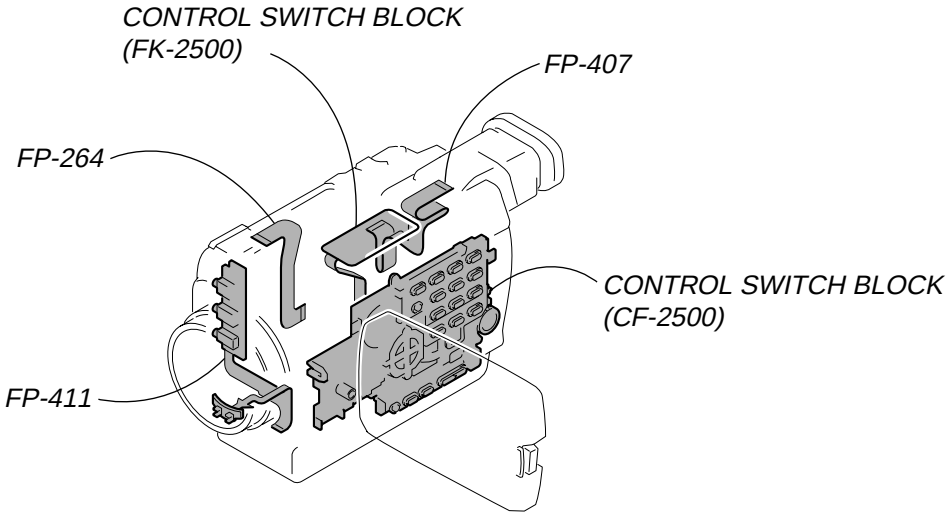
2-15. CIRCUIT BOARDS LOCATION

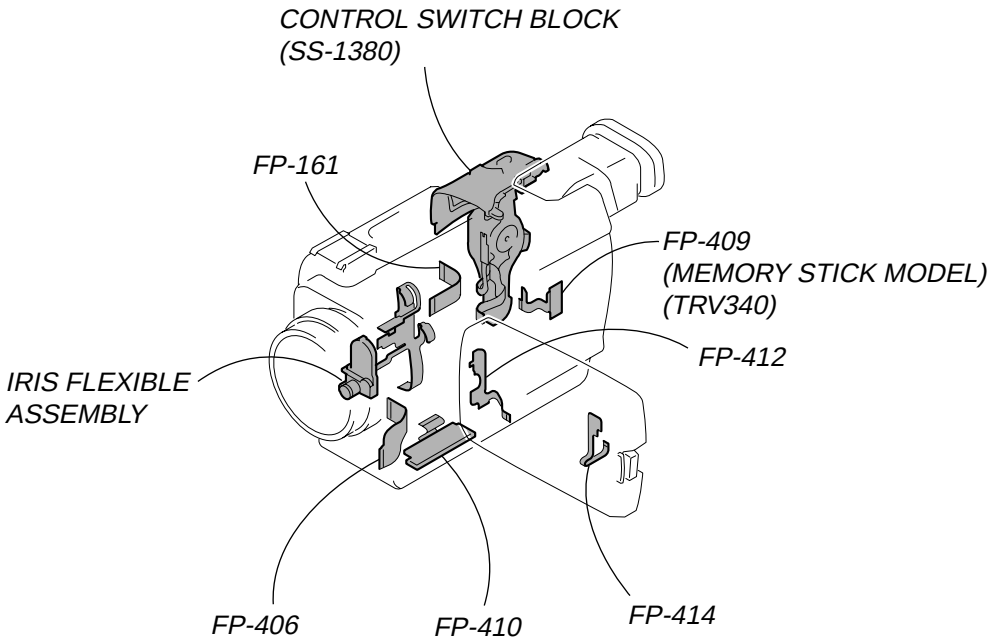


NAME	FUNCTION
CD-357	CCD IMAGER
LB-076	EVF BACK LIGHT
PD-160	CHA, DISPLAY DRIVE, BACK LIGHT/LCD DRIVE, TG
SI-032	STEADY SHOT, LASER LINK
VC-276	CAMERA, VIDEO, DV INTERFACE, CAMERA/MECHA/HI CONTROL, AUDIO, D/D CONVERTER

2-16. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck are not shown.

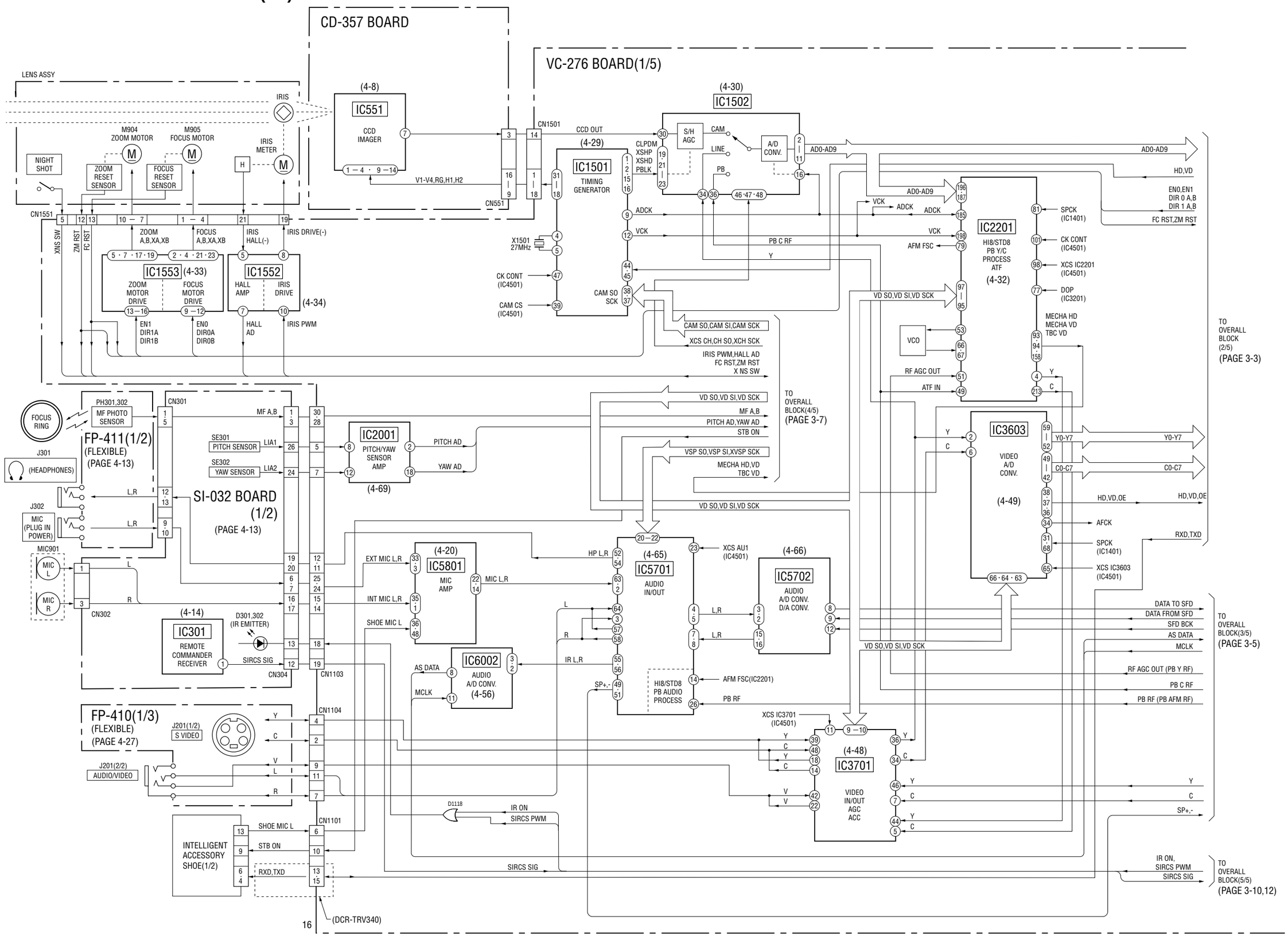




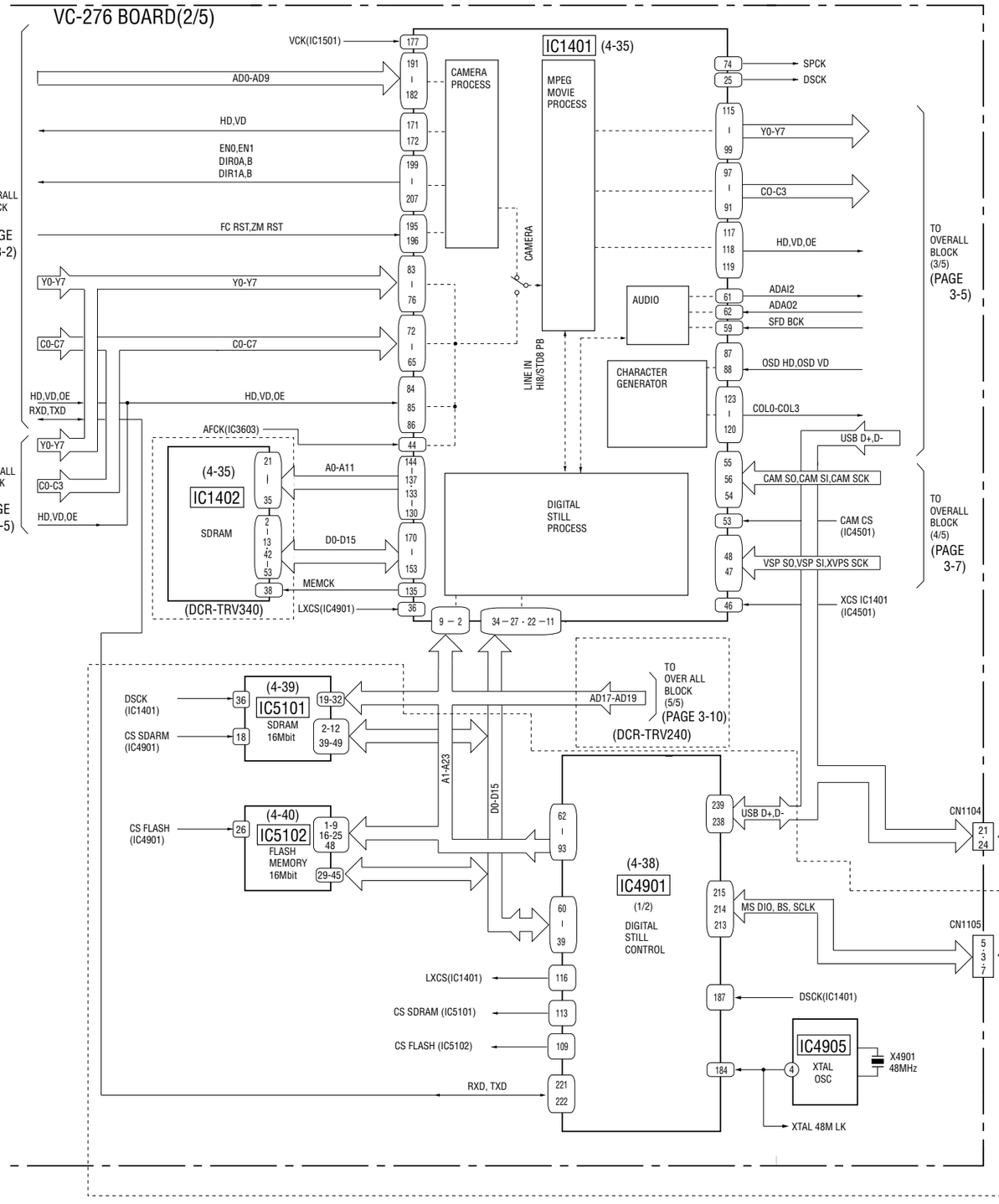
SECTION 3
BLOCK DIAGRAMS

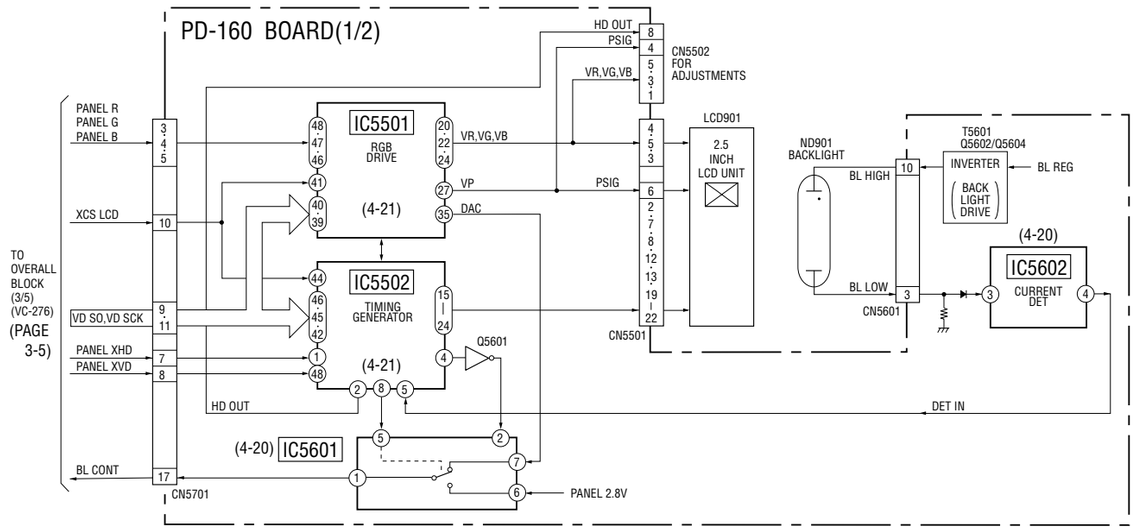
3-1. OVERALL BLOCK DIAGRAM (1/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



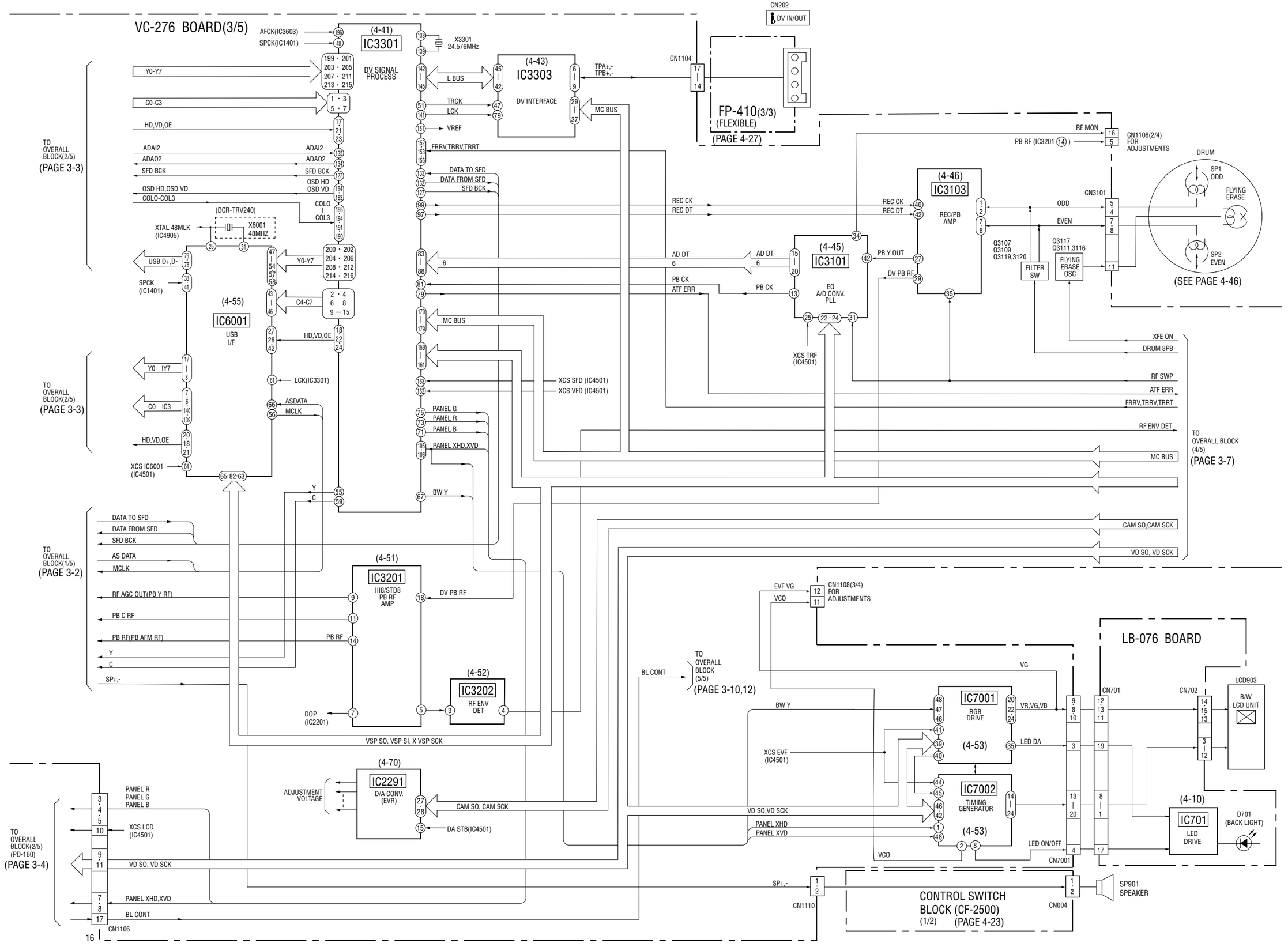
3-2. OVERALL BLOCK DIAGRAM (2/5) ( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.





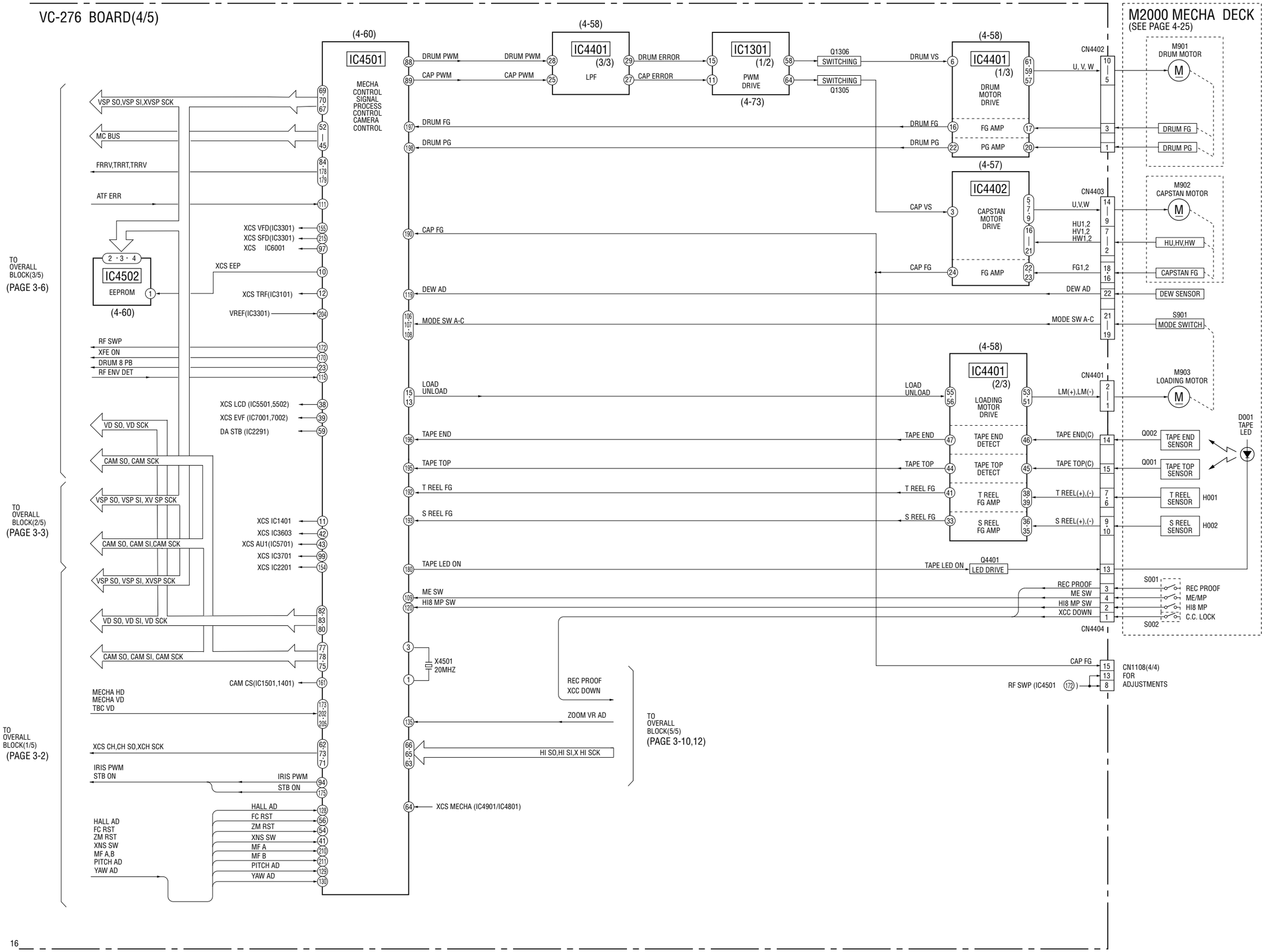
3-3. OVERALL BLOCK DIAGRAM (3/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



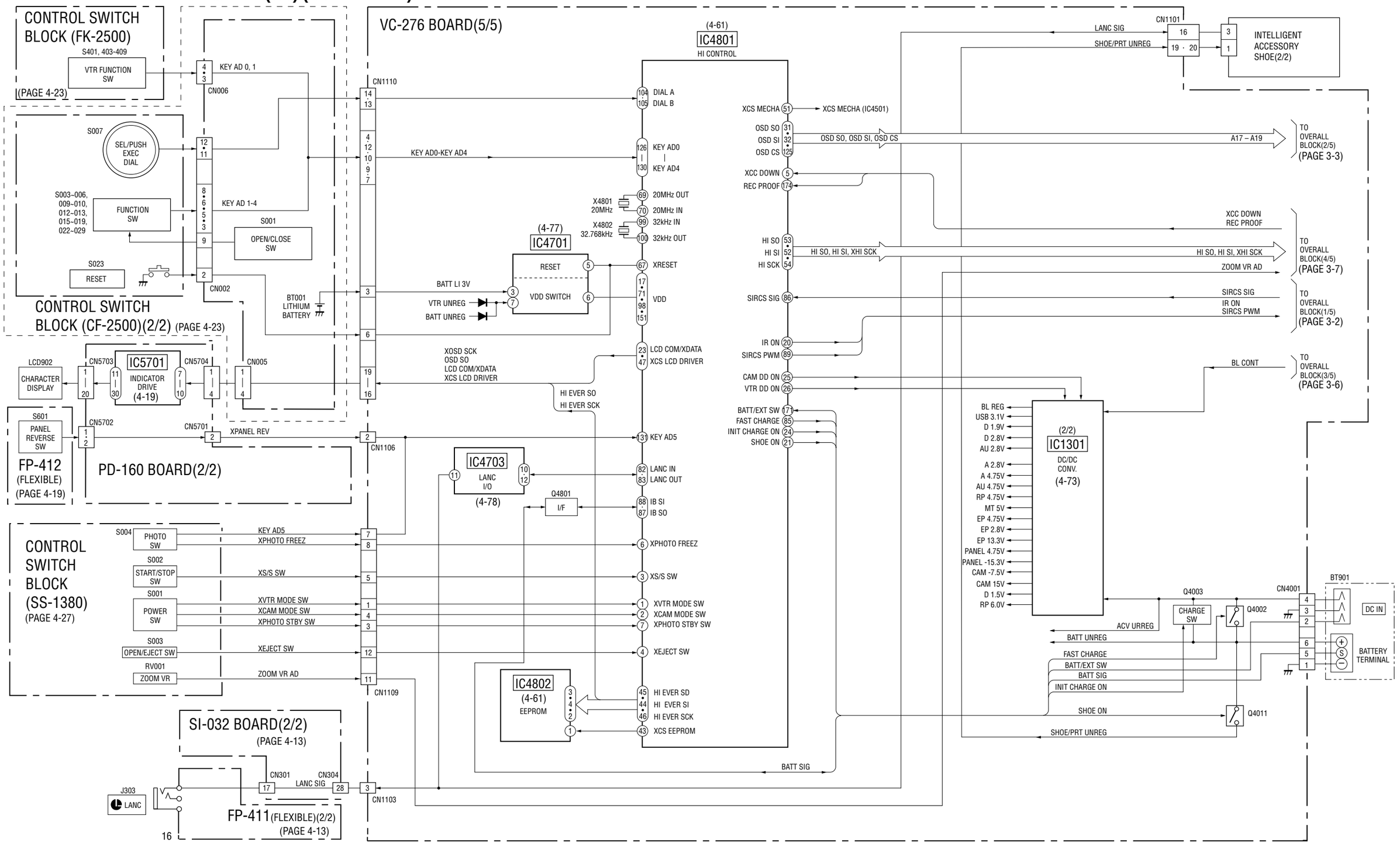
3-4. OVERALL BLOCK DIAGRAM (4/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



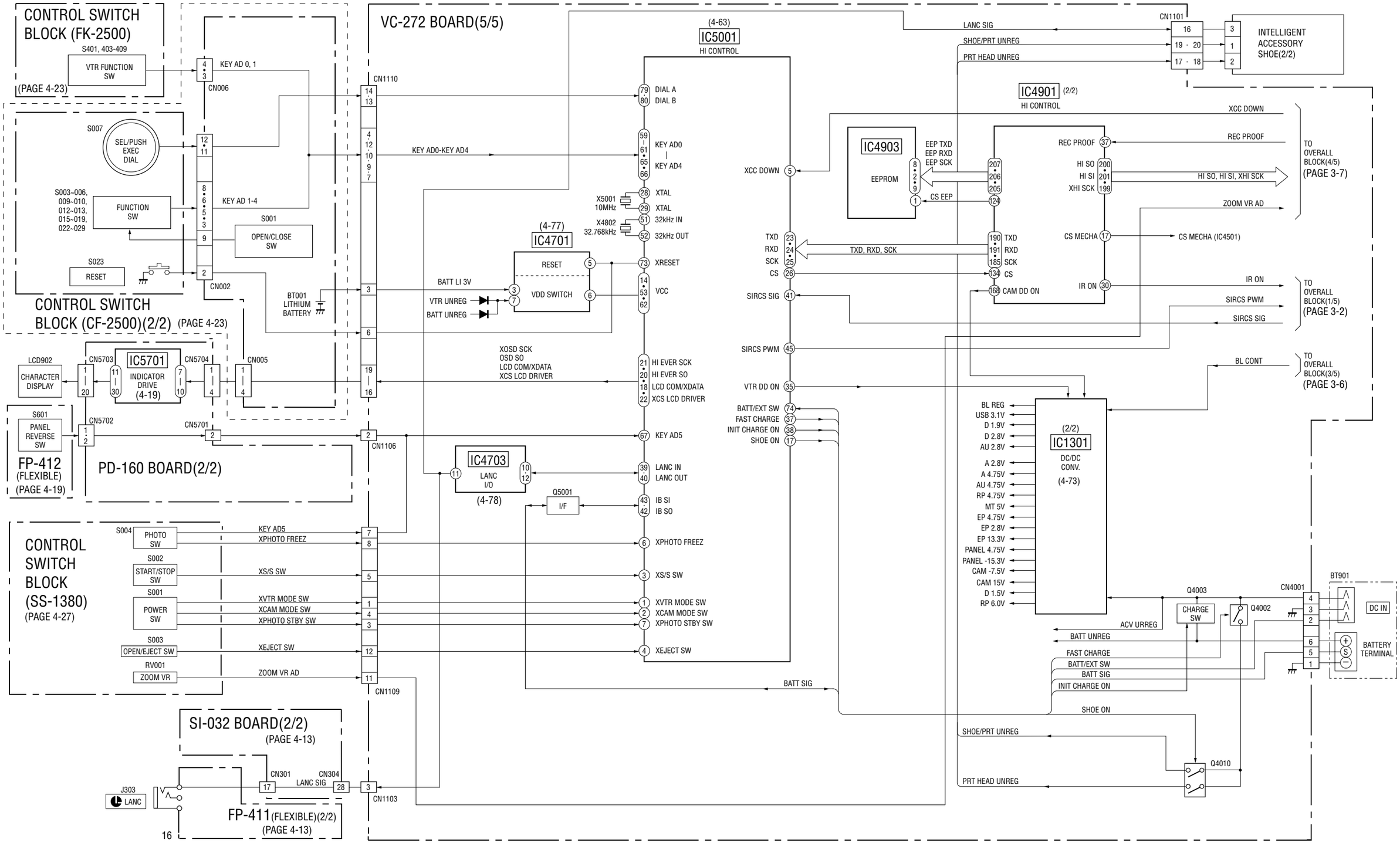
3-5. OVERALL BLOCK DIAGRAM (5/5) (DCR-TRV240)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



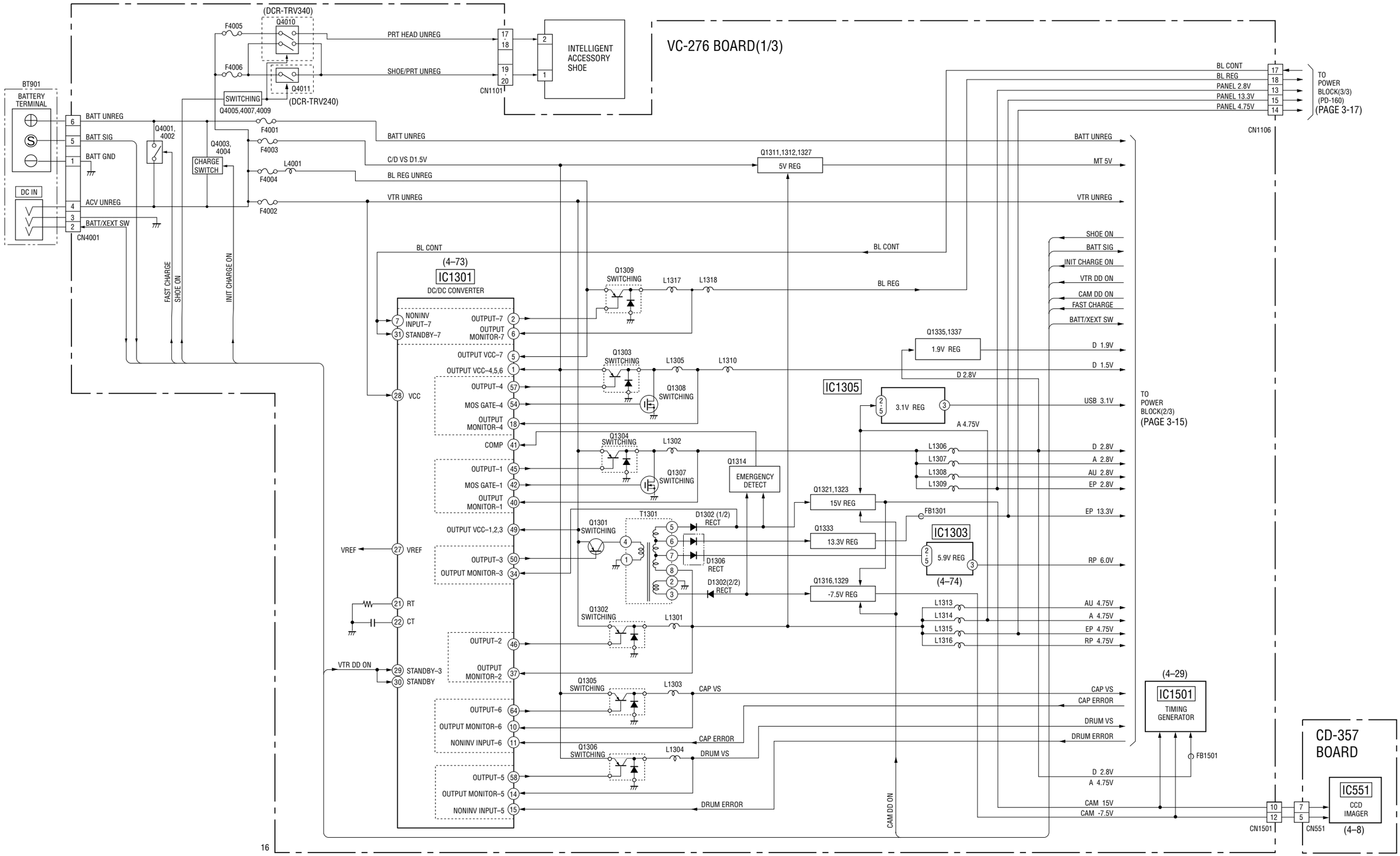
3-5. OVERALL BLOCK DIAGRAM (5/5) (DCR-TRV340)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



3-6. POWER BLOCK DIAGRAM (1/3)

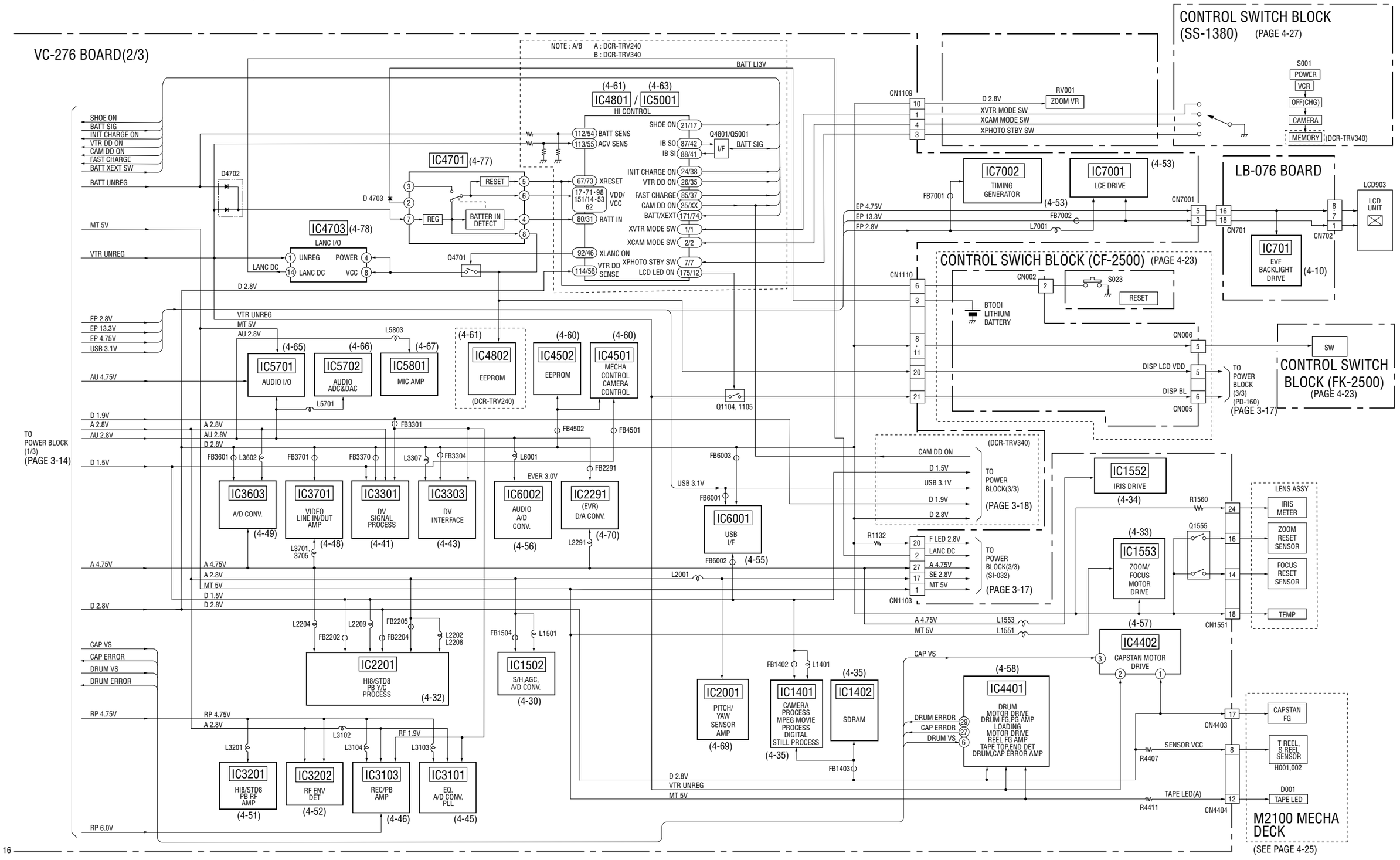
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



16

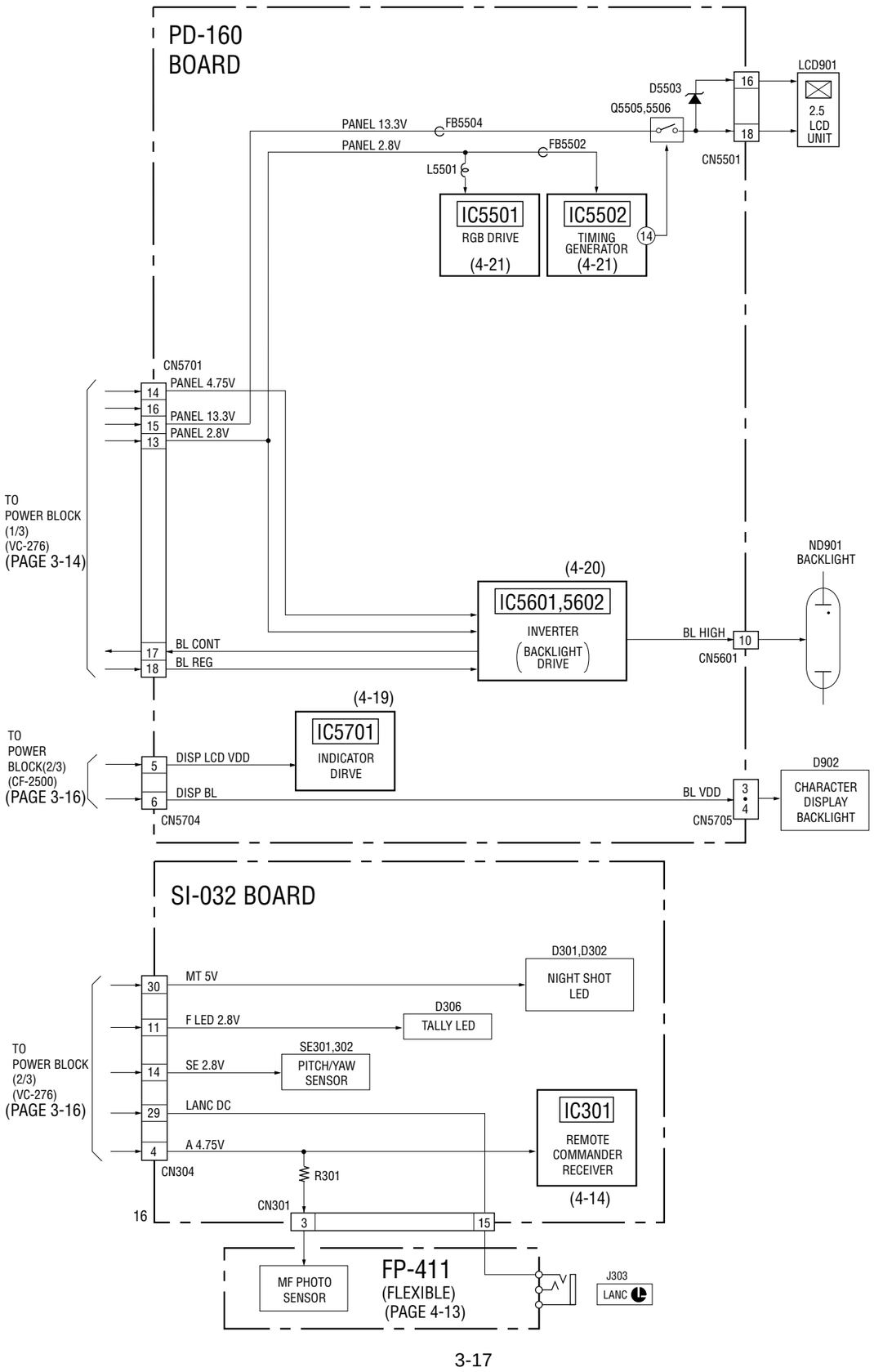
3-7. POWER BLOCK DIAGRAM (2/3)

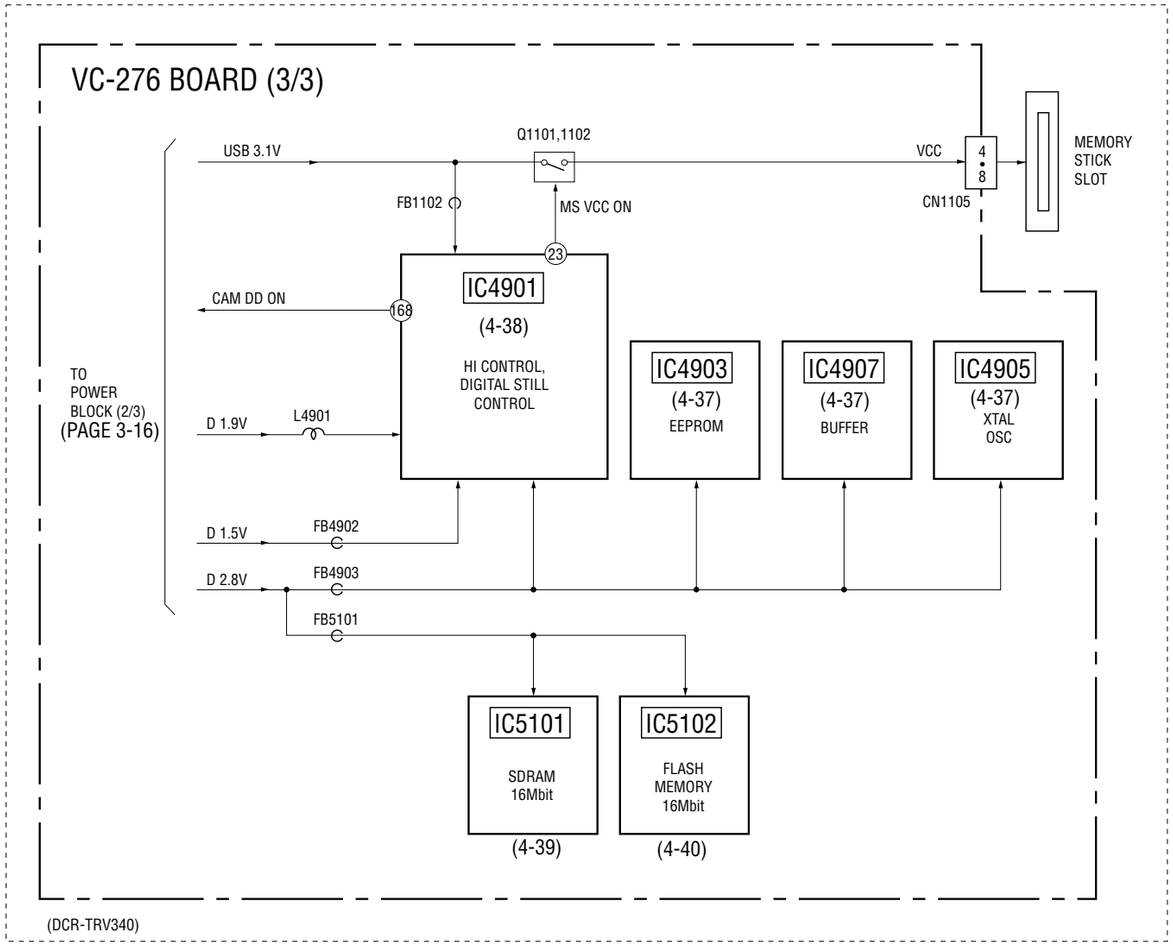
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



3-8. POWER BLOCK DIAGRAM (3/3)

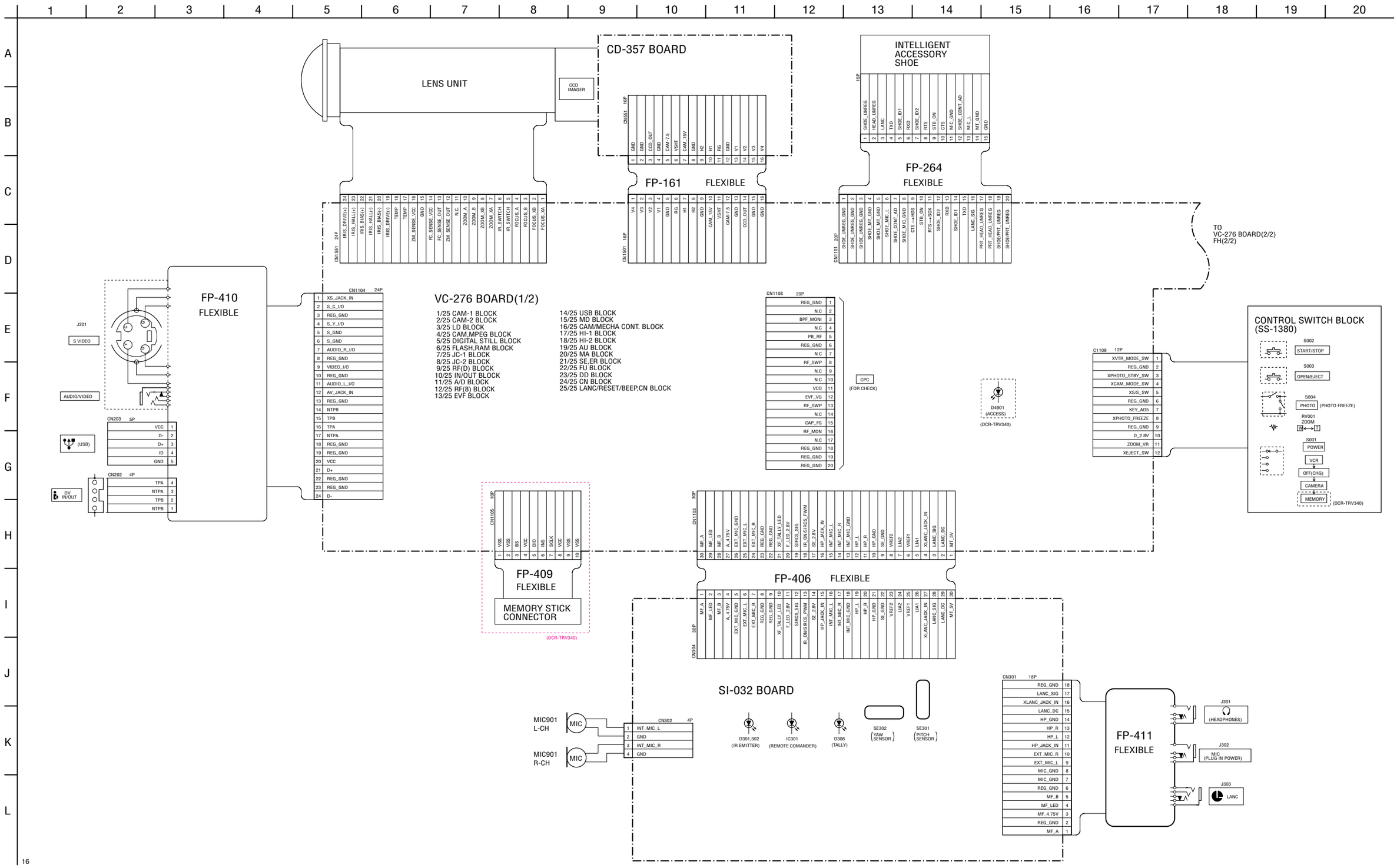
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



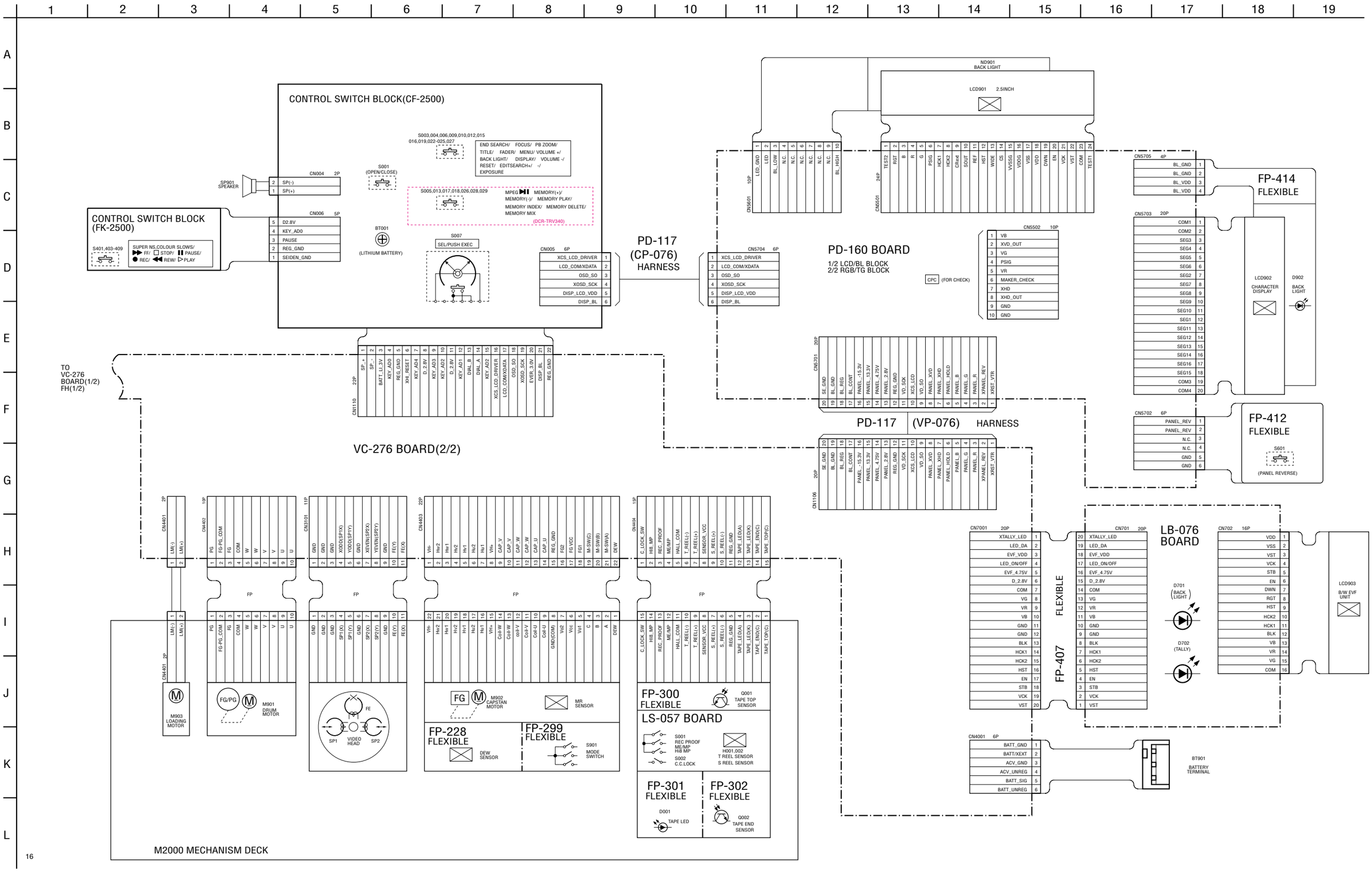


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



FRAME SCHEMATIC DIAGRAM (2/2)

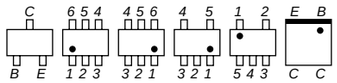


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

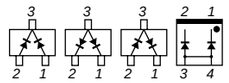
THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ▒▒▒: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

Transistor



Diode



(For schematic diagrams)
- All capacitors are in μF unless otherwise noted. p: pF.
  50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

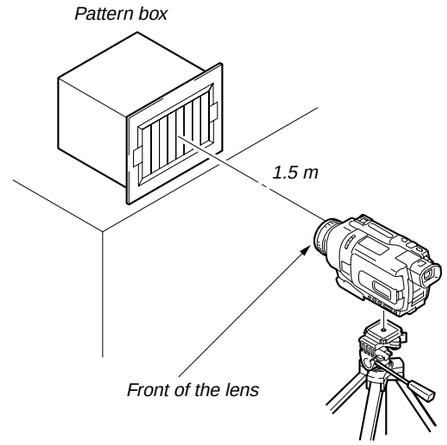
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

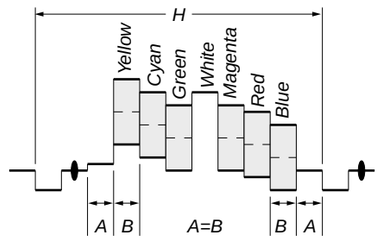


Fig. a (Video output terminal output waveform)

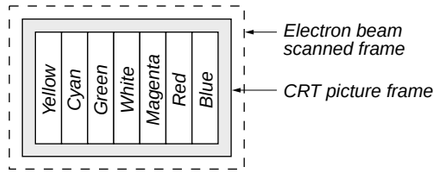
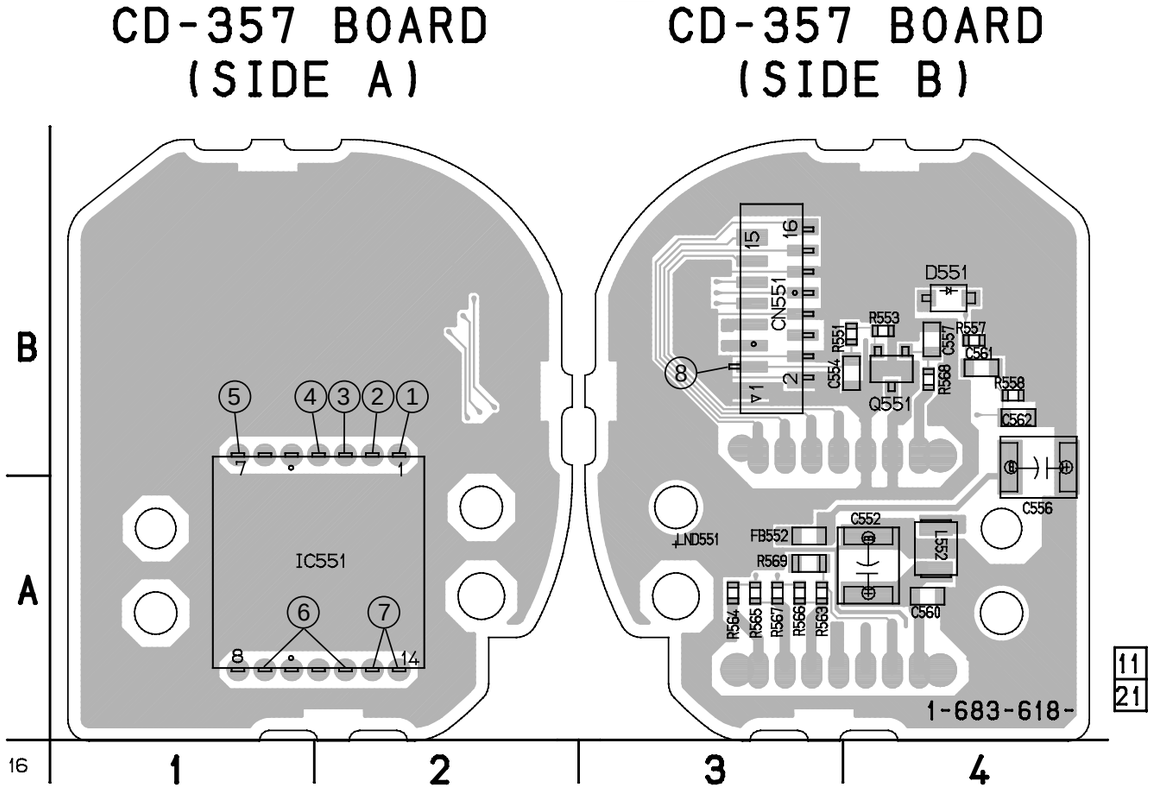


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

CD-357 (CCD IMAGER) PRINTED WIRING BOARD

• : Uses unleaded solder.



For printed wiring board

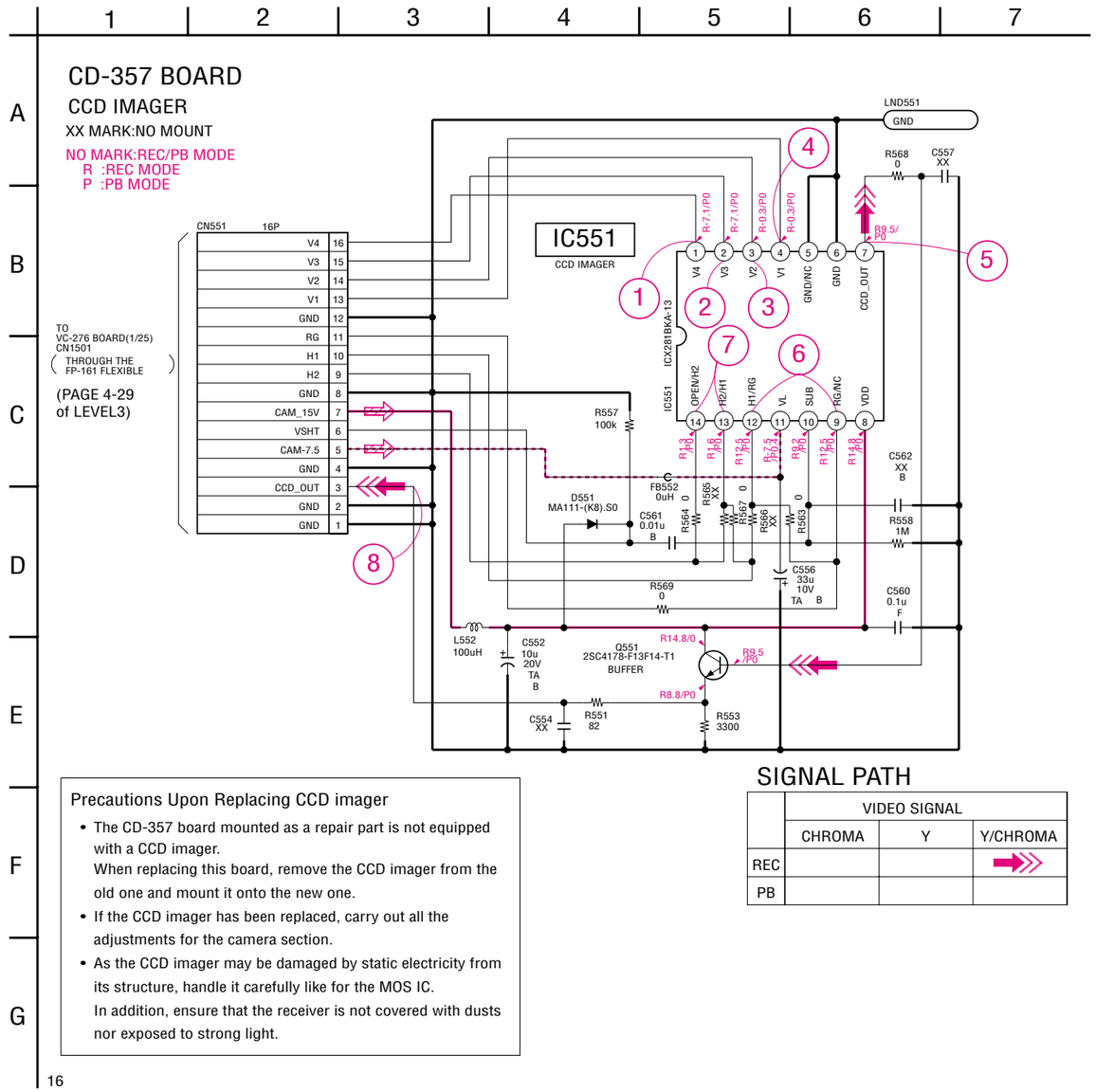
- Refer to page 4-90 for parts location.
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts

Transistor

There are a few cases that the part printed on this diagram isn't mounted in this model.

For Schematic Diagram

• Refer to page 4-83 for waveforms.



	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

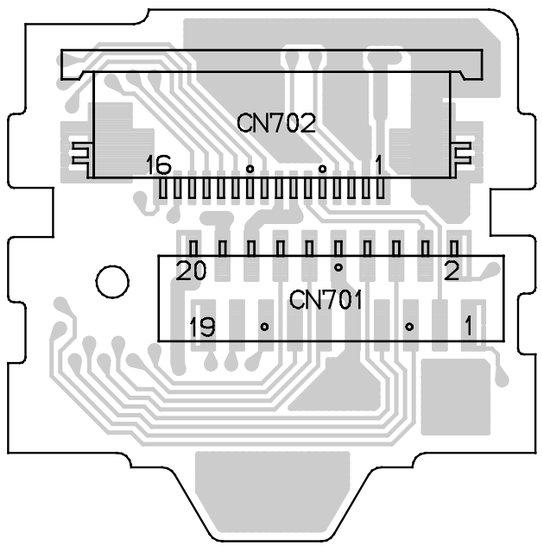
Precautions Upon Replacing CCD imager

- The CD-357 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

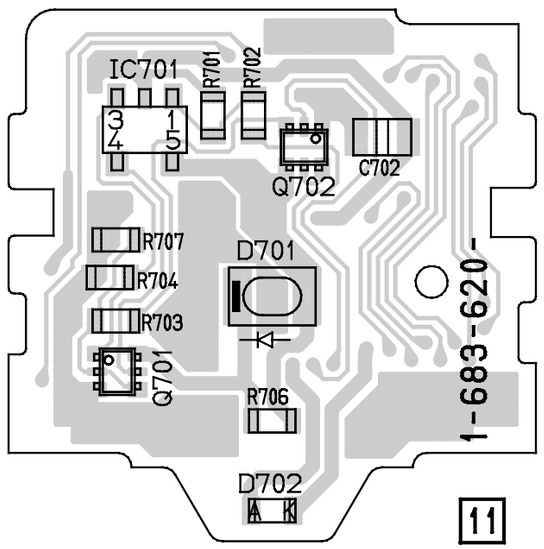
LB-076 (EVF, BACK LIGHT) PRINTED WIRING BOARD

• : Uses unleaded solder.

LB-076 BOARD (SIDE A)



LB-076 BOARD (SIDE B)

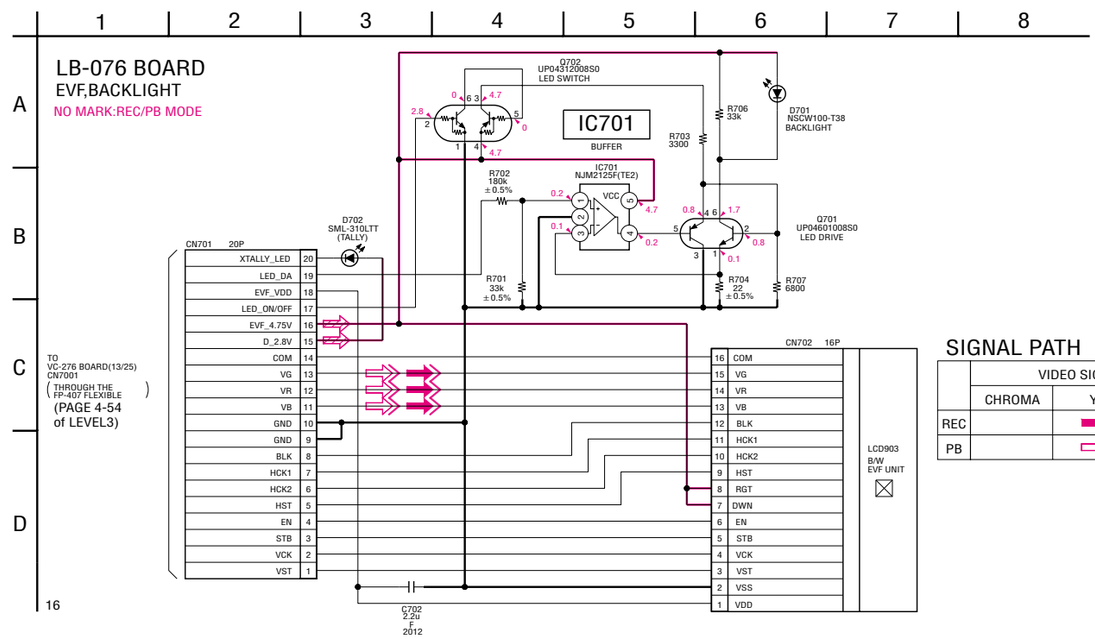


For printed wiring board

- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts

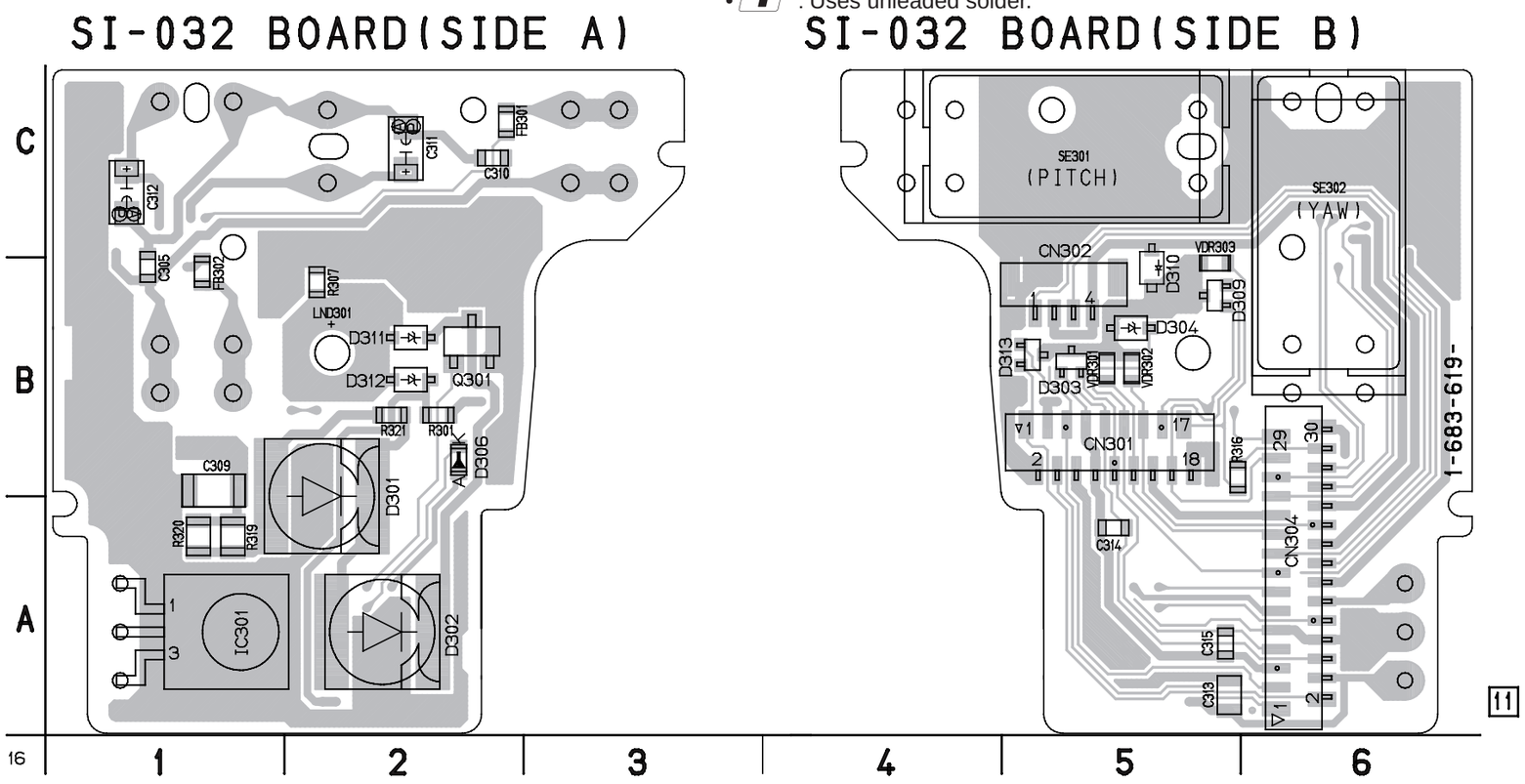
Transistor

There are a few cases that the part printed on this diagram isn't mounted in this model.



SI-032 (STEADY SHOT, LASER LINK) PRINTED WIRING BOARD

• : Uses unleaded solder.



For printed wiring board

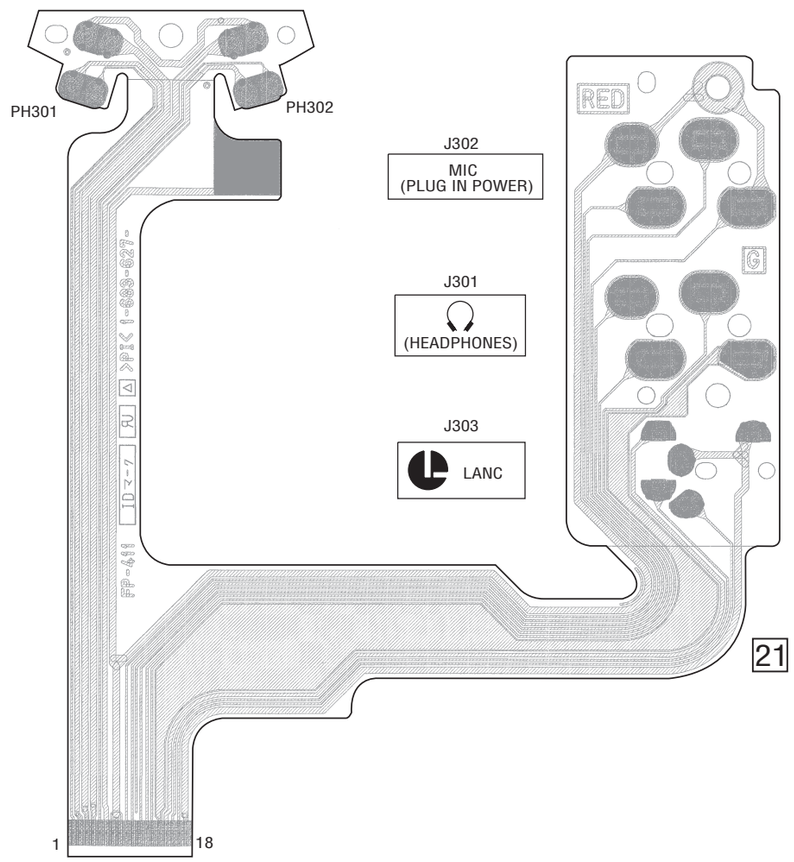
- Refer to page 4-90 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.

FP-411 FLEXIBLE BOARD

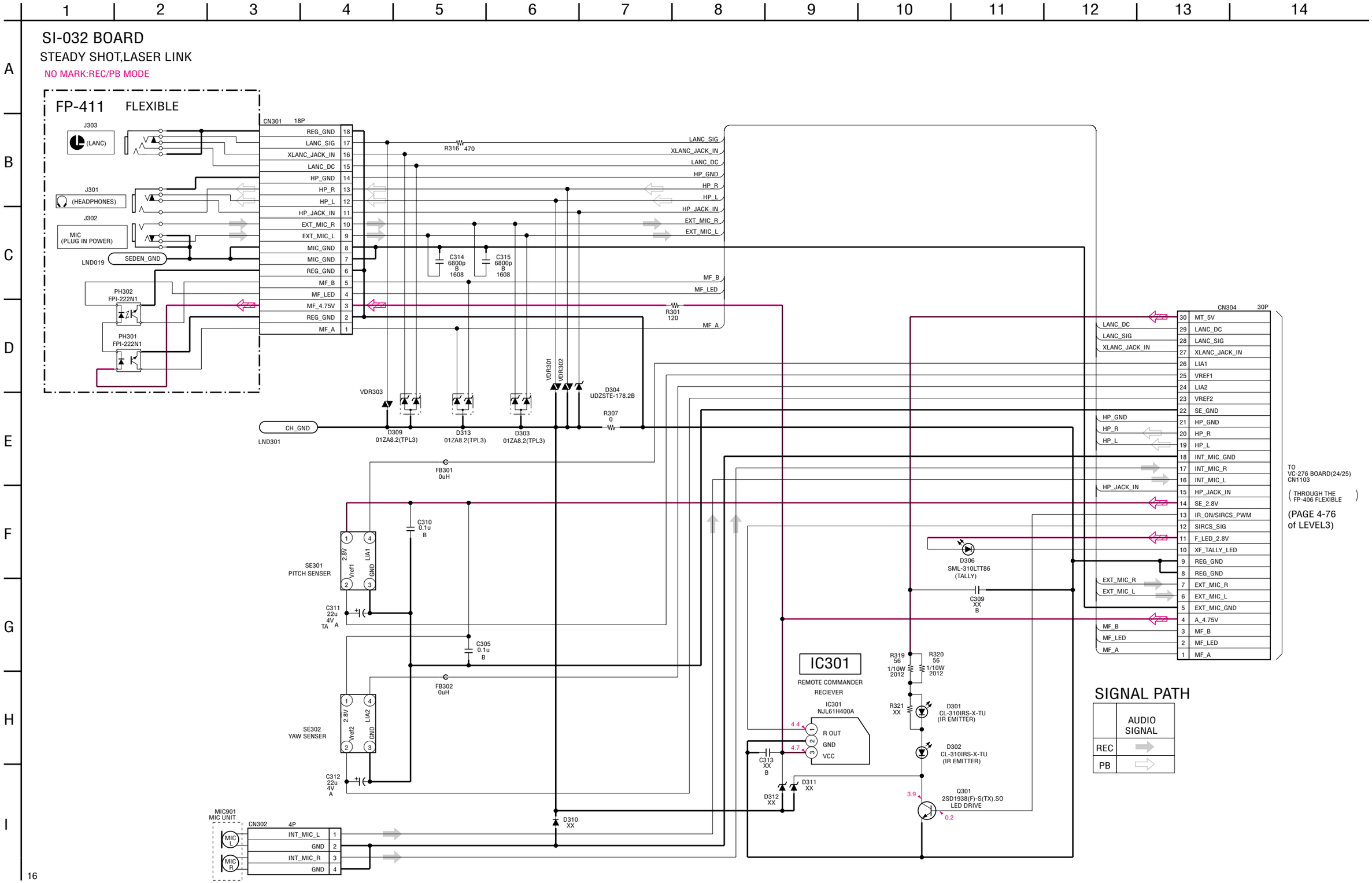


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

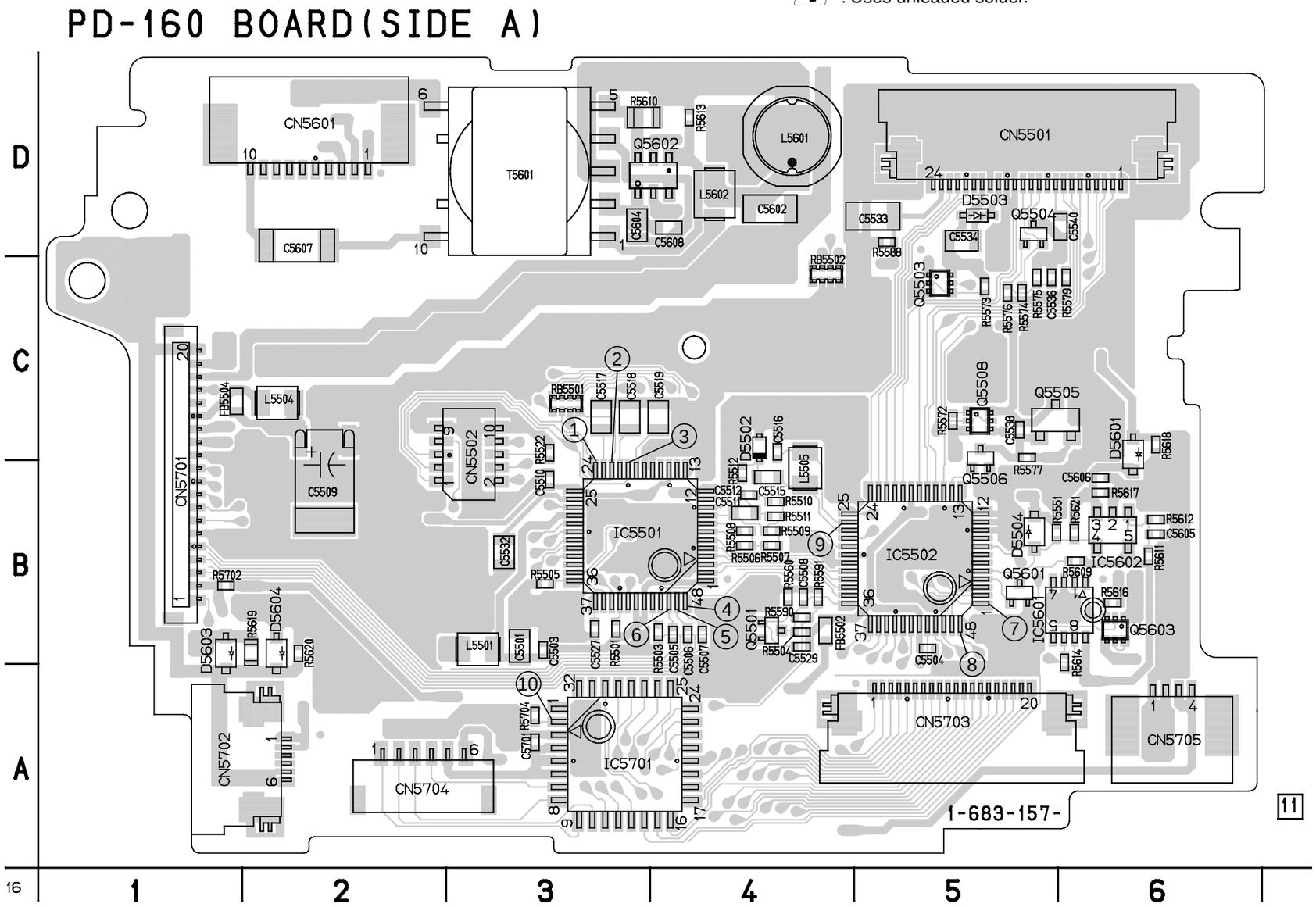
For Schematic Diagram

• Refer to page 4-11 for printed wiring board.



PD-160 (CHA, DISPLAY DRIVE, BACK LIGHT, LCD DRIVE, TG) PRINTED WIRING BOARD

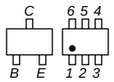
• : Uses unleaded solder.



For printed wiring board

- Refer to page 4-90 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

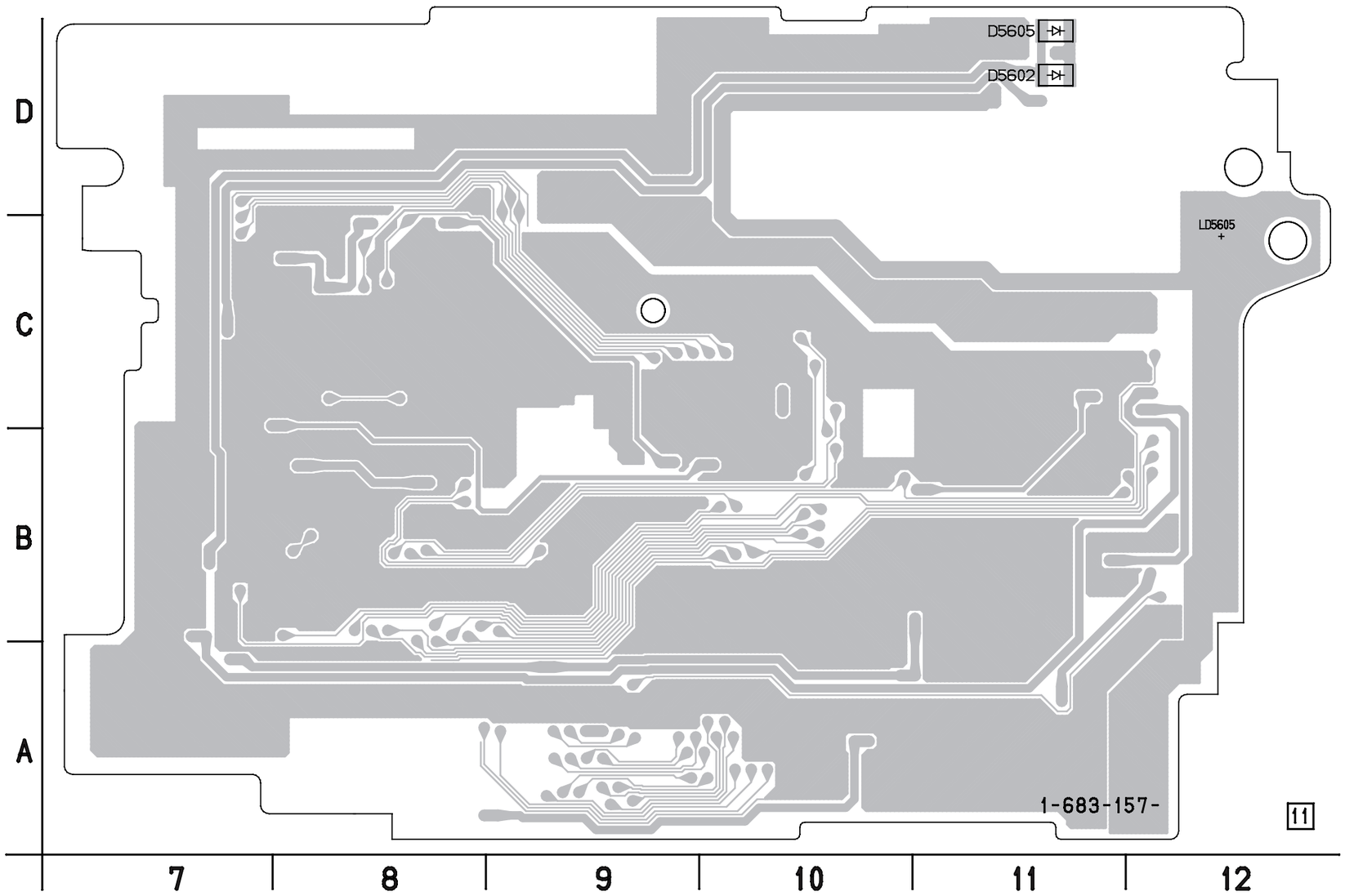
Transistor



There are a few cases that the part printed on this diagram isn't mounted in this model.

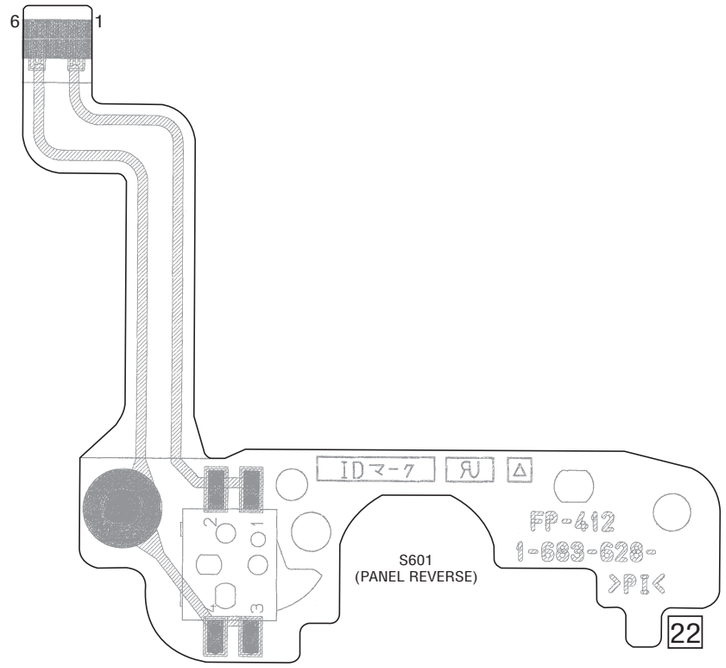
• : Uses unleaded solder.

PD-160 BOARD(SIDE B)



FP-412 FLEXIBLE BOARD

FP-412 FLEXIBLE

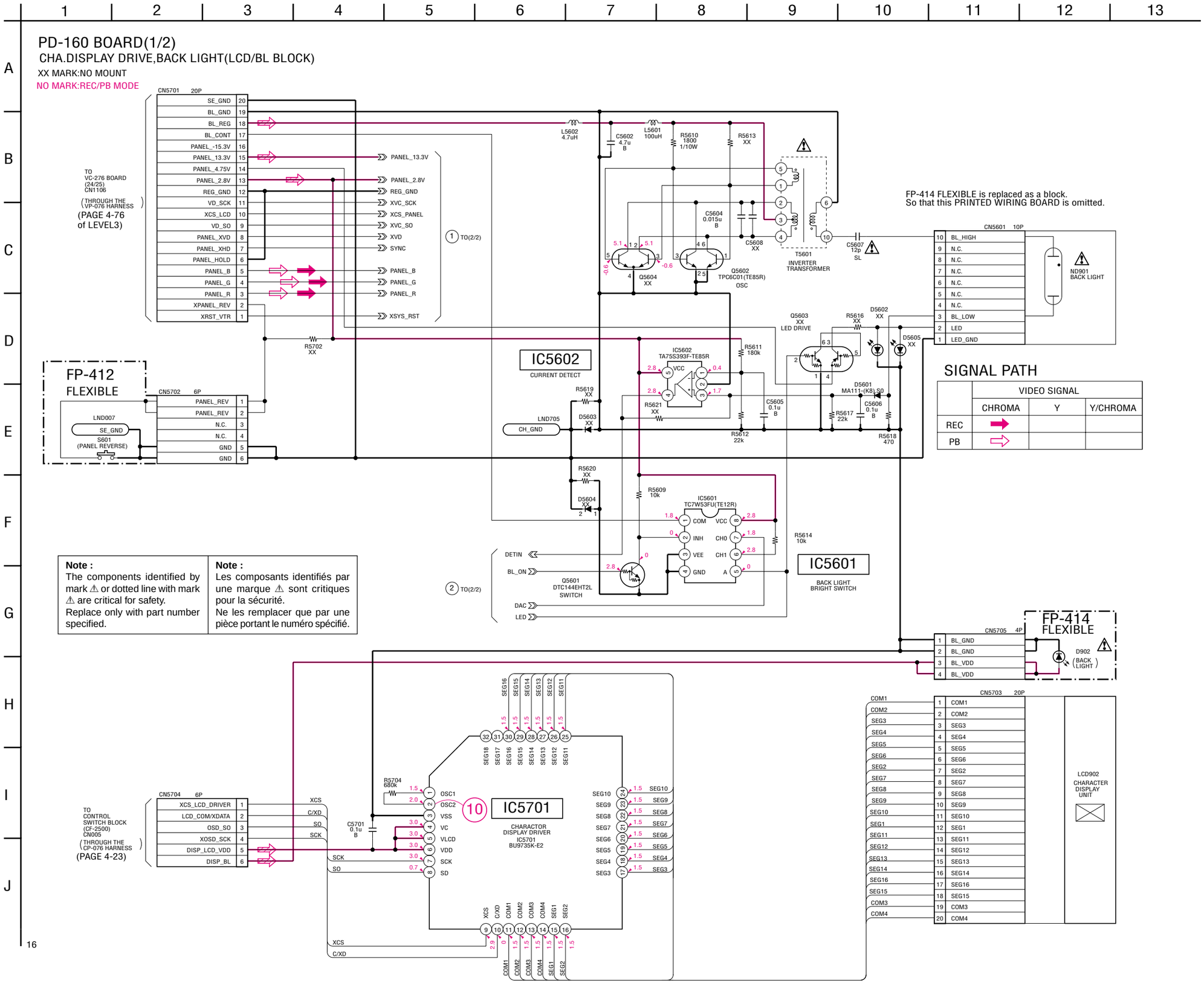


For printed wiring board

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

For Schematic Diagram
- Refer to page 4-15 for printed wiring board.
- Refer to page 4-84 for waveform.



Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

- Refer to page 4-15 for printed wiring board.
- Refer to page 4-84 for waveforms.

PD-160 BOARD(2/2)

LCD DRIVE,TG(RGB/TG BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

IC5501

DRIVER

IC5501

CXA3289AR-T4

IC5502

Timing Generator

IC5502

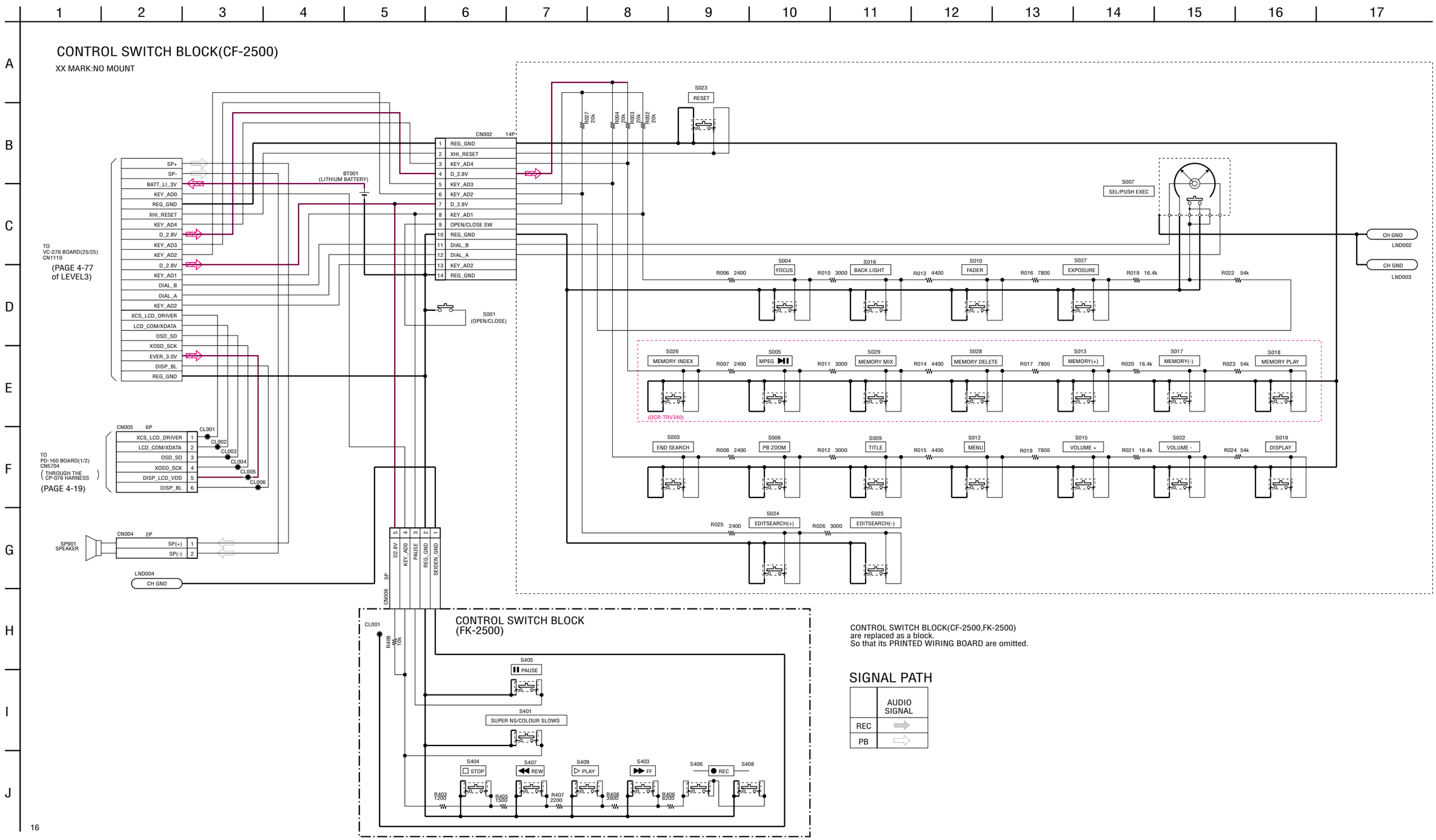
CXD3512R-T4

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

CONTROL SWITCH BLOCK(CF-2500)

XX MARK:NO MOUNT



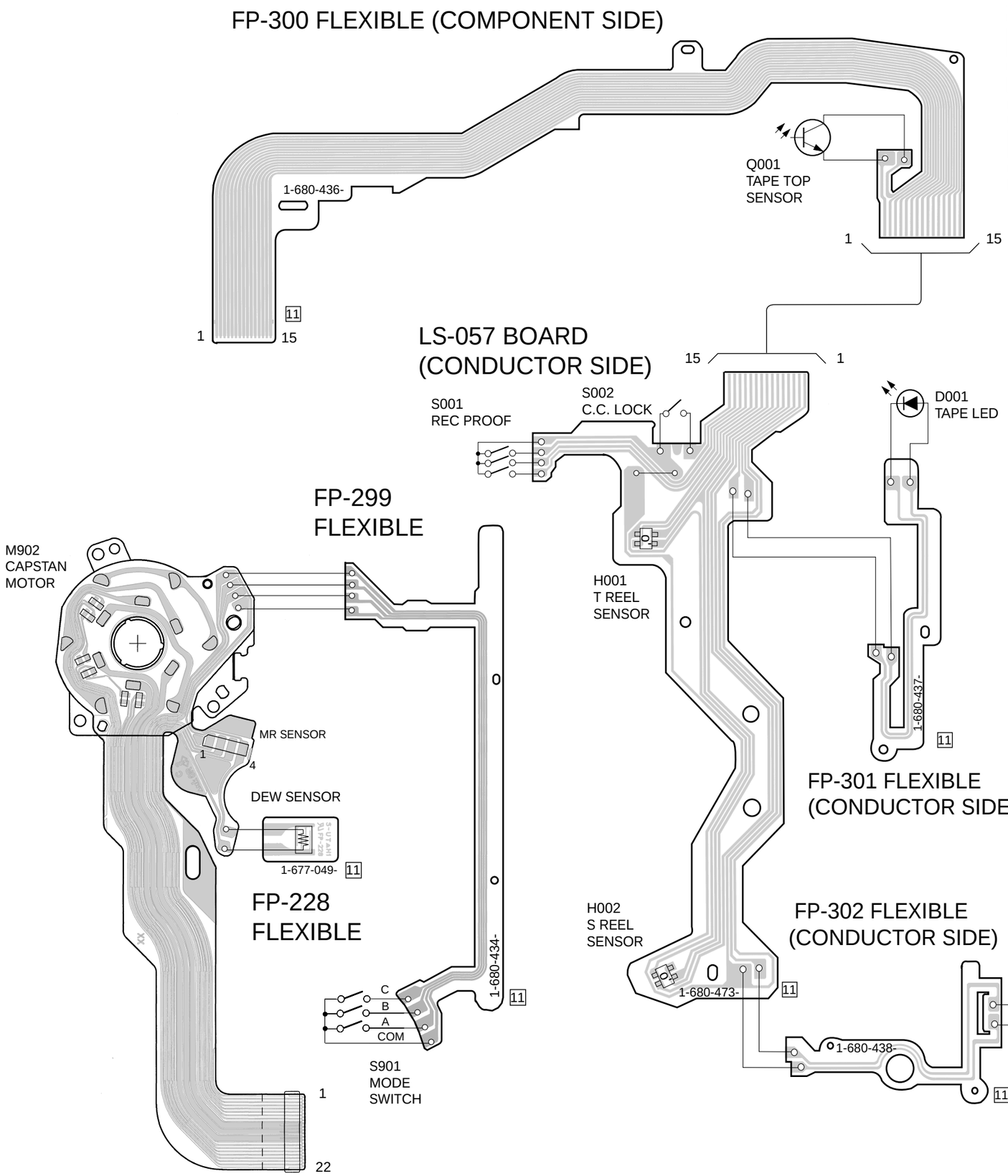
CONTROL SWITCH BLOCK (FK-2500)

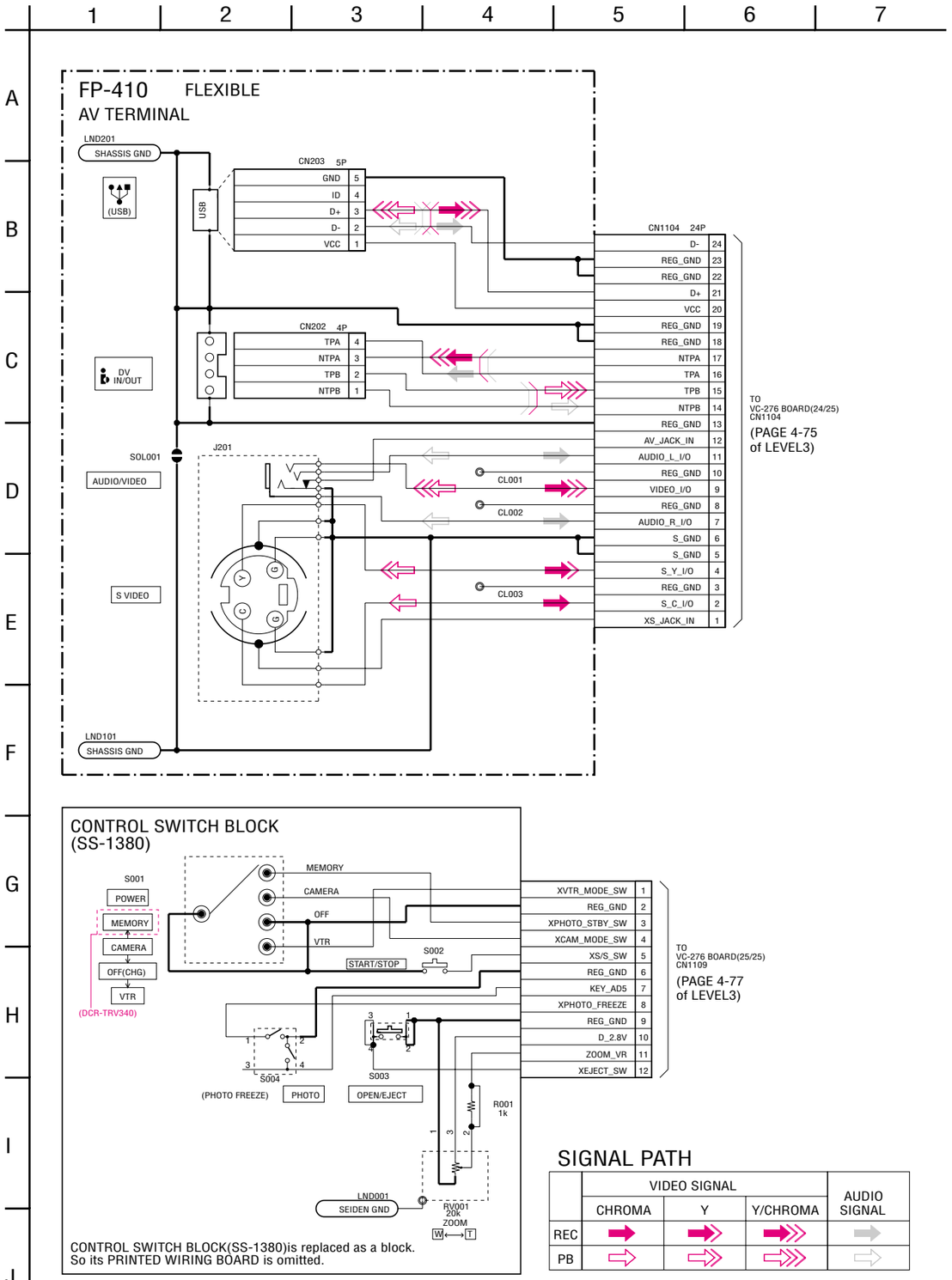
CONTROL SWITCH BLOCK(CF-2500,FK-2500)
are replaced as a block.
So that its PRINTED WIRING BOARD are omitted.

SIGNAL PATH

	AUDIO SIGNAL
REC	⇒
PB	⇨

LS-057 (S/T REEL SENSOR), FP-228 (DEW SENSOR), FP-299 (MODE SWITCH), FP-300 (TAPE TOP), FP-302 (TAPE END), FP-301 (TAPE LED) FLEXIBLE BOARDS

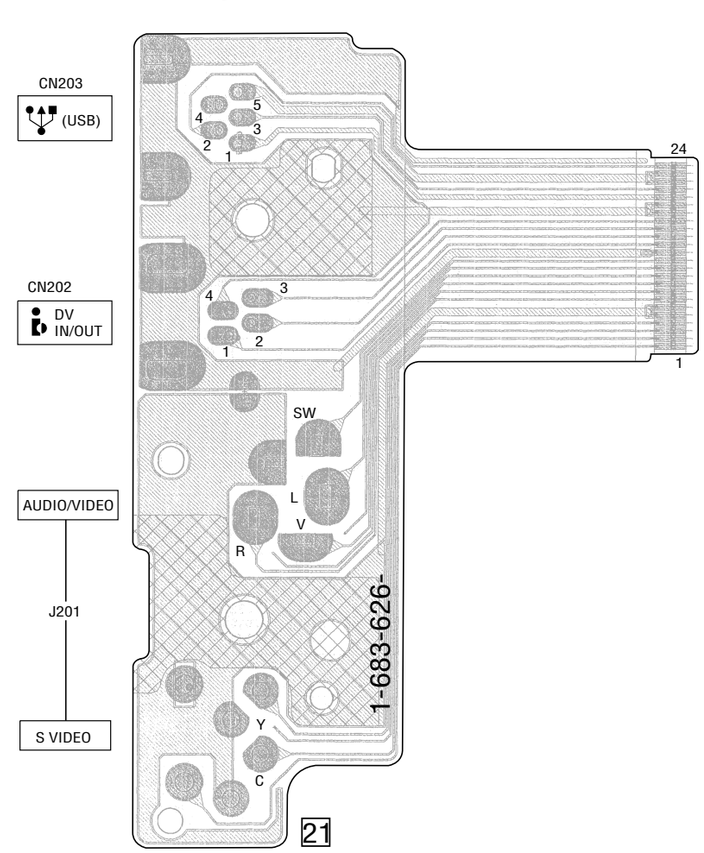




SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

FP-410 FLEXIBLE BOARD



For printed wiring board

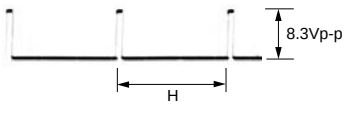
There are a few cases that the part printed on this diagram isn't mounted in this model.

Schematic diagram and printed wiring board of the VC-276 board are not shown.
Pages from 4-29 to 4-82 are not shown.

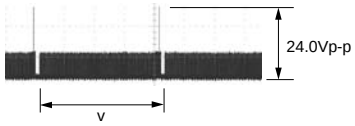
4-3. WAVEFORMS

CD-357 BOARD
CAMERA REC

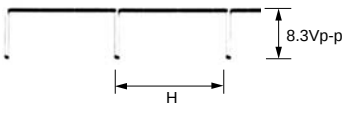
① IC551 ①



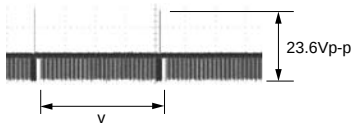
② IC551 ②



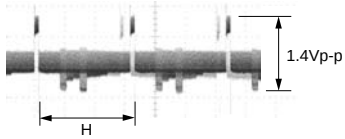
③ IC551 ③



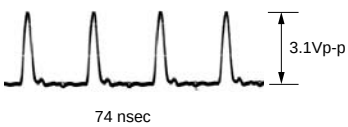
④ IC551 ④



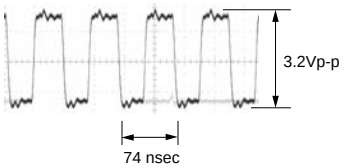
⑤ IC551 ⑦



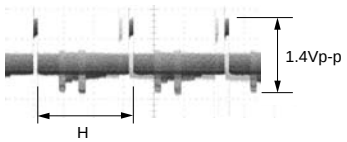
⑥ IC551 ⑨,⑫



⑦ IC551 ⑬,⑭

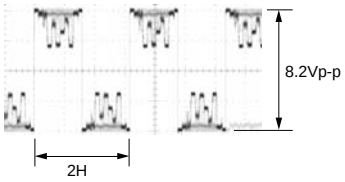


⑧ CN551 ③

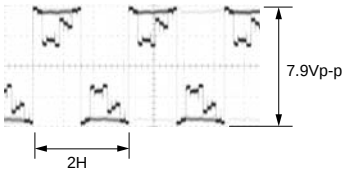


PD-160 BOARD

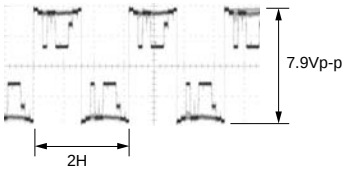
① IC5501 ㉔ LCD



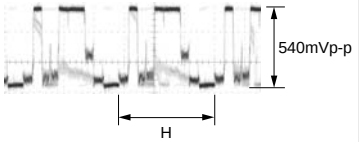
② IC5501 ㉒ LCD



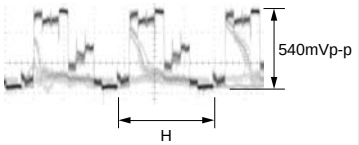
③ IC5501 ⑳ LCD



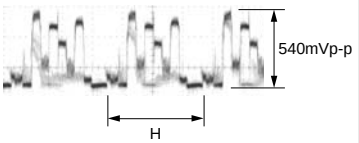
④ IC5501 ㊽ LCD



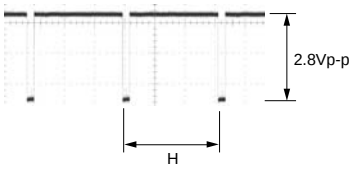
⑤ IC5501 ㊼ LCD



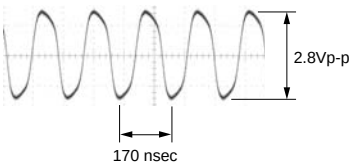
⑥ IC5501 ㊻ LCD



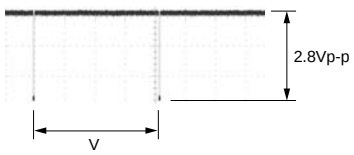
⑦ IC5502 ① LCD



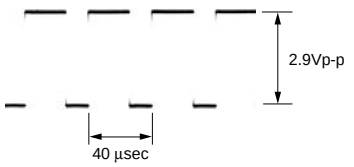
⑧ IC5502 ㉖ LCD



⑨ IC5502 ㊽ LCD



⑩ IC5701 ②



Waveforms and mounted parts location of the VC-276 board are not shown.
Pages from 4-85 to 4-89 are not shown.

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-357 BOARD

*	C552	A-4
*	C554	B-4
*	C556	A-4
*	C557	B-4
*	C560	A-4
*	C561	B-4
*	C562	B-4
*	CN551	B-3
*	D551	B-4
*	FB552	A-3
	IC551	A-1
*	L552	A-4
*	Q551	B-4
*	R551	B-4
*	R553	B-4
*	R557	B-4
*	R558	B-4
*	R563	A-3
*	R564	A-3
*	R565	A-3
*	R566	A-3
*	R567	A-3
*	R568	B-4
*	R569	A-3

SI-032 BOARD

	C305	B-1
	C309	B-1
	C310	C-2
	C311	C-2
	C312	C-1
*	C313	A-5
*	C314	A-5
*	C315	A-5
*	CN301	B-5
*	CN302	B-5
*	CN304	A-6
	D301	A-2
	D302	A-2
*	D303	B-5
*	D304	B-5
	D306	B-2
*	D309	B-5
*	D310	B-5
	D311	B-2
	D312	B-2
*	D313	B-5
	FB301	C-2
	FB302	B-1
	IC301	A-1
	Q301	B-2
	R301	B-2
	R307	B-2
*	R316	B-5
	R319	A-1
	R320	A-1
	R321	B-2
*	SE301	C-5
*	SE302	C-6
*	VDR301	B-5
*	VDR302	B-5
*	VDR303	B-5

PD-160 BOARD

	C5501	B-3
	C5503	B-3
	C5504	B-5
	C5505	B-4
	C5506	B-4
	C5507	B-4
	C5508	B-4
	C5509	B-2
	C5510	B-3
	C5511	B-4
	C5512	B-4
	C5515	B-4
	C5516	C-4
	C5517	C-3
	C5518	C-3
	C5519	C-4
	C5527	B-3
	C5529	B-4
	C5532	B-3
	C5533	D-5
	C5534	D-5
	C5536	C-5
	C5538	C-5
	C5540	D-6
	C5602	D-4
	C5604	D-3
	C5605	B-6
	C5606	B-6
	C5607	D-2
	C5608	D-4
	C5701	A-3
	CN5501	D-5
	CN5502	C-3
	CN5601	D-2
	CN5701	B-1
	CN5702	A-1
	CN5703	A-5
	CN5704	A-2
	CN5705	A-6
	D5502	C-4
	D5503	D-5
	D5504	B-5
	D5601	C-6
*	D5602	D-11
	D5603	B-1
	D5604	B-2
*	D5605	D-11
	FB5502	B-4
	FB5504	C-1
	IC5501	B-3
	IC5502	B-5
	IC5601	B-6
	IC5602	B-6
	IC5701	A-3
	L5501	B-3
	L5504	C-2
	L5505	B-4
	L5601	D-4
	L5602	D-4
	Q5501	B-4
	Q5503	C-5
	Q5504	D-5
	Q5505	C-5
	Q5506	B-5
	Q5508	C-5
	Q5601	B-5
	Q5602	D-3
	Q5603	B-6
	R5501	B-3
	R5503	B-4
	R5504	B-4
	R5505	B-3
	R5506	B-4
	R5507	B-4
	R5508	B-4
	R5509	B-4
	R5510	B-4
	R5511	B-4
	R5512	B-4
	R5522	C-3
	R5551	B-6
	R5560	B-4
	R5572	C-5
	R5573	C-5
	R5574	C-5
	R5575	C-5
	R5576	C-5
	R5577	B-5
	R5579	C-6
	R5588	D-5
	R5590	B-4
	R5591	B-4
	R5609	B-6
	R5610	D-3
	R5611	B-6
	R5612	B-6
	R5613	D-4
	R5614	B-6
	R5616	B-6
	R5617	B-6
	R5618	C-6
	R5619	B-2
	R5620	B-2
	R5621	B-6
	R5702	B-1
	R5704	A-3
	RB5501	C-3
	RB5502	C-4
	T5601	D-3

SECTION 5
ADJUSTMENTS

1. Adjusting items when replacing main parts and boards.

When replacing main parts, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	LCD block ND901 (Fluorescent tube)	LCD block LCD901 (LCD panel)	Mechanism deck *1	Mechanism deck M901 (Drum assy.) *1	Mechanism deck M902 (Capstan motor)	Mechanism deck LS chassis assy	Parts replacement: CD-357 board IC551 (CCD imager)	PD-160 board IC5501 (RGB driver (LCD))	PD-160 board IC5502 (Timing generator (LCD))	PD-160 board Q5602/5604, T5601 (Inverter)	SI-032 board SE301,302 (PITCH,YAW sensor)	VC-276 board IC1501, X1501 (Timing generator)	VC-276 board IC1502 (S/H, AGC)	VC-276 board IC2201 (Hi8/Std8 Y/C process)	VC-276 board IC3103 (REC/PB AMP)	VC-276 board IC3101 (EQ, A/D conv. PLL)	VC-276 board IC3701 VIDEO IN/OUT)	VC-276 board IC3301 (DV signal process)	VC-276 board IC2291 (EVR)	VC-276 board IC5701 (AUDIO IN/OUT, AFM)	VC-276 board IC7001 (LCD driver (EVF))	VC-276 board IC7002 (Timing generator (EVF))
Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1F page data	Initialization of D page data *3																								
	Initialization of A, D page data *2																								
	Initialization of B, 1B page data *2																								
	Initialization of 8, C, 1C page data																								
	Initialization of E, F, 1F page data																								
Camera	HALL adj.	●																							
	Flange back adj.	●							●																
	Optical axis adj.	●							●																
	Color reproduction adj.								●						●										
	AWB & LV standard data input								●						●										
	Auto white balance adj.								●						●										
	Steady shot check.												●												
EVF	VCO adj.																						●	●	
	RGB AMP adj.																						●		
	Contrast adj.																				●		●		
LCD	VCO adj.									●	●														
	PSIG gray adj.									●															
	RGB AMP adj.									●															
	Black limit adj.									●															
	Contrast adj.									●											●				
	Center level adj									●															
	V-COM adj.			●						●															
	White balance adj.		●	●						●		●													
System control	Serial No. input																								
Servo & RF	REEL FG adj.				●			●																	
	Switching position adj.				●	●																			
	AGC center level adj.				●	●											●	●							
	APC & AEQ adj.				●	●											●	●							
	PLL f_0 & LPF f_0 adj.				●	●											●	●							
	Hi8/Std8 switching position adj.				●	●																			
	CAP FG duty adj.				●		●															●			
Video	27MHz origin oscillation adj.													●								●			
	S VIDEO OUT Y level adj.																			●	●				
	S VIDEO OUT chroma level adj.																			●	●				
	Hi8/Std8 Y/C level setting															●									
	Hi8/Std8 AFC f_0 adj.															●						●			
Audio	Hi8/Std8 AFM BPF f_0 adj.																					●	●		
	Hi8/Std8 AFM 1.5MHz deviation adj.																					●	●		
	Hi8/Std8 AFM 1.7MHz deviation adj.																					●	●		
Mechanism	Tape path adj.				●	●	●	●																	

Table. 5-1-1 (1).

Adjustment Section	Adjustment	Board replacement			EEPROM replacement				
		SI-032 board (COMPLETE)	PD-160 board (COMPLETE)	VC-276 board (COMPLETE)	IC4502 (EEPROM) VC-276 board	IC4802 (EEPROM) *3 VC-276 board	IC4903 (EEPROM) *2 *4 VC-276 board	IC5102 (FLASH MEMORY) *2 VC-276 board	Supporting RadarW
Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1F page data	Initialization of D page data *3			●		●			
	Initialization of A, D page data *2			●			●		
	Initialization of B, 1B page data *2			●			●		
	Initialization of 8, C, 1C page data			●	●				
	Initialization of E, F, 1F page data			●	●				
Camera	HALL adj.			●	●				●
	Flange back adj.			●	●				●
	Optical axis adj.			●	●				
	Color reproduction adj.			●	●				
	AWB & LV standard data input			●	●				●
	Auto white balance adj.			●	●				●
	Steady shot check.	●		●	●				
EVF	VCO adj.			●	●				
	RGB AMP adj.			●	●				
	Contrast adj.			●	●				
LCD	VCO adj.		●	●	●				
	PSIG gray adj.		●	●	●				
	RGB AMP adj.		●	●	●				
	Black limit adj.		●	●	●				
	Contrast adj.		●	●	●				
	Center level adj		●	●	●				
	V-COM adj.		●	●	●				
	White balance adj.		●	●	●				
System control	Serial No. input			●	●				
Servo & RF	REEL FG adj.			●	●				●
	Switching position adj.			●	●				●
	AGC center level adj.			●	●				●
	APC & AEQ adj.			●	●				●
	PLL f_0 & LPF f_0 adj.			●	●				●
	Hi8/Std8 switching position adj.			●	●				
	CAP FG duty adj.			●	●				●
Video	27MHz origin oscillation adj.			●	●				
	S VIDEO OUT Y level adj.			●	●				
	S VIDEO OUT chroma level adj.			●	●				
	Hi8/Std8 Y/C level setting			●	●				●
	Hi8/Std8 AFC f_0 adj.			●	●				●
Audio	Hi8/Std8 AFM BPF f_0 adj.			●	●				
	Hi8/Std8 AFM 1.5MHz deviation adj.			●	●				
	Hi8/Std8 AFM 1.7MHz deviation adj.			●	●				
Mechanism	Tape path adj.								

*1: When replacing the drum assy. or mechanism deck, reset the data of page: <D>[7], address: <D0 to D7>[A7 to A9] to "00". (Refer to "Record of Use check" of "5-4. SERVICE MODE")
< > : DCR-TRV240,
[ ] : DCR-TRV340
*2: DCR-TRV340
*3: DCR-TRV240
*4: When replacing the IC4903, set the loader writing inhibit mode. (Refer to "1-2-3. INITIALIZATION OF B, 1B PAGE DATA")

Table. 5-1-1 (2).

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope
• Regulated power supply • Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded) (Note1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	Multi CPC jig	J-6082-311-A	For adjusting the LCD block
J-9	CPC-13 jig	J-6082-443-A	For adjusting the video section For adjusting the viewfinder
J-10	Minipattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera base	J-6082-384-A	For adjusting the flange back

Note1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

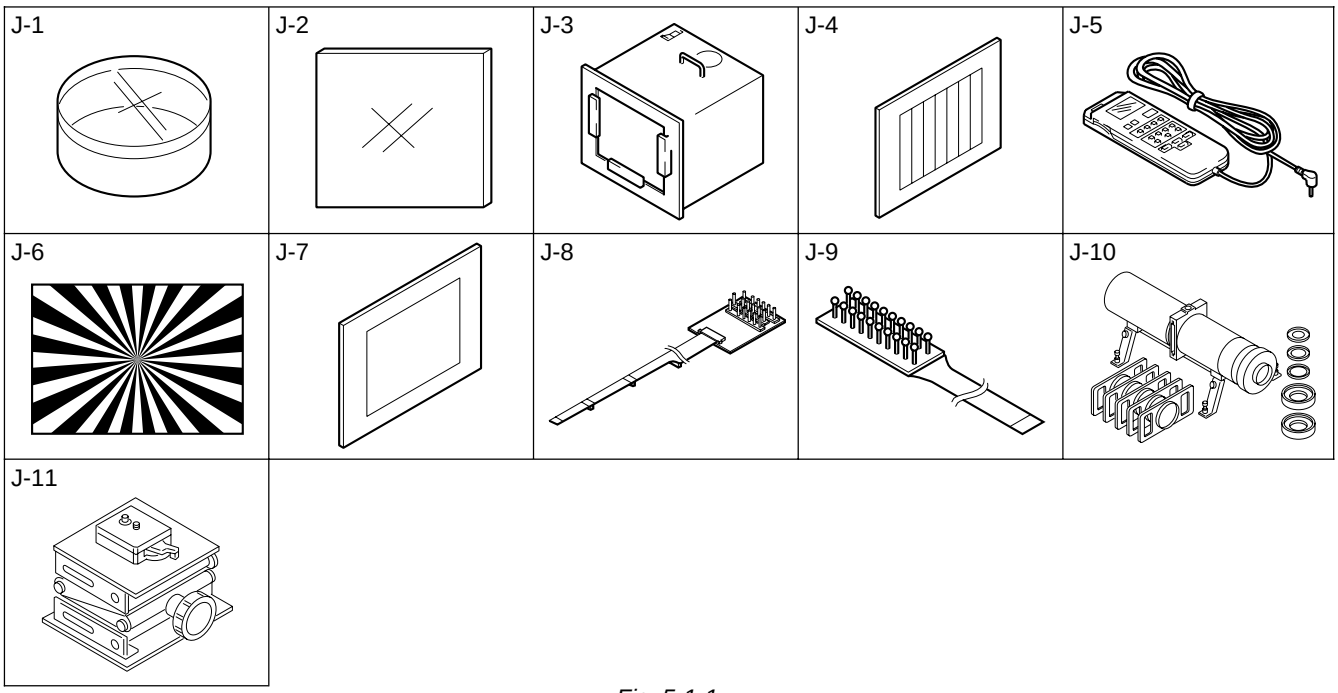


Fig. 5-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note3: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1) Connect the equipment for adjustments according to Fig. 5-1-3.
2) The front panel block (SI-032 board (Microphone amp, remote commander receiver), FP-411 flexible (MIC jack, Headphone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjustment remote commander.

Note4: Only for DCR-TRV240 model, as removing the cabinet (R) (removing the VC-276 board CN1110) means removing the lithium 3V power supply (CF-2500 block BT001), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page: 2, address: B0 to C6) and data on history use (data of page: 2, address: A5 to AA). (Refer to "5-4. Service Mode" for the self-diagnosis data and data on the history use.)

Note5: Setting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the SS-1380 block removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note6: Exiting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

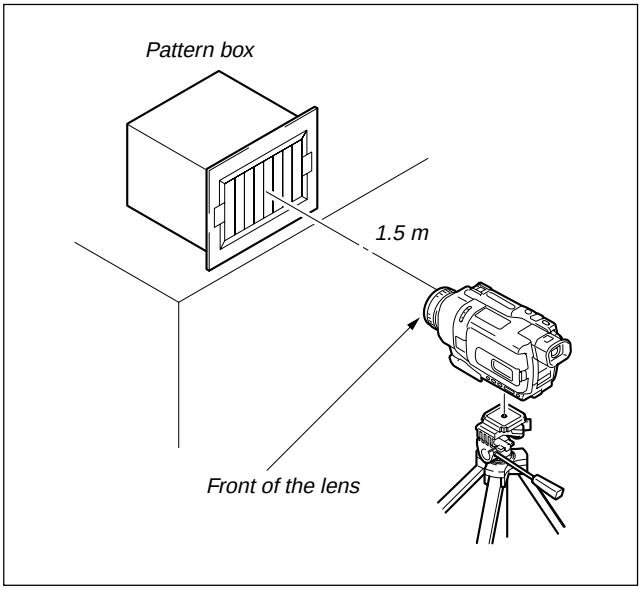


Fig. 5-1-2.

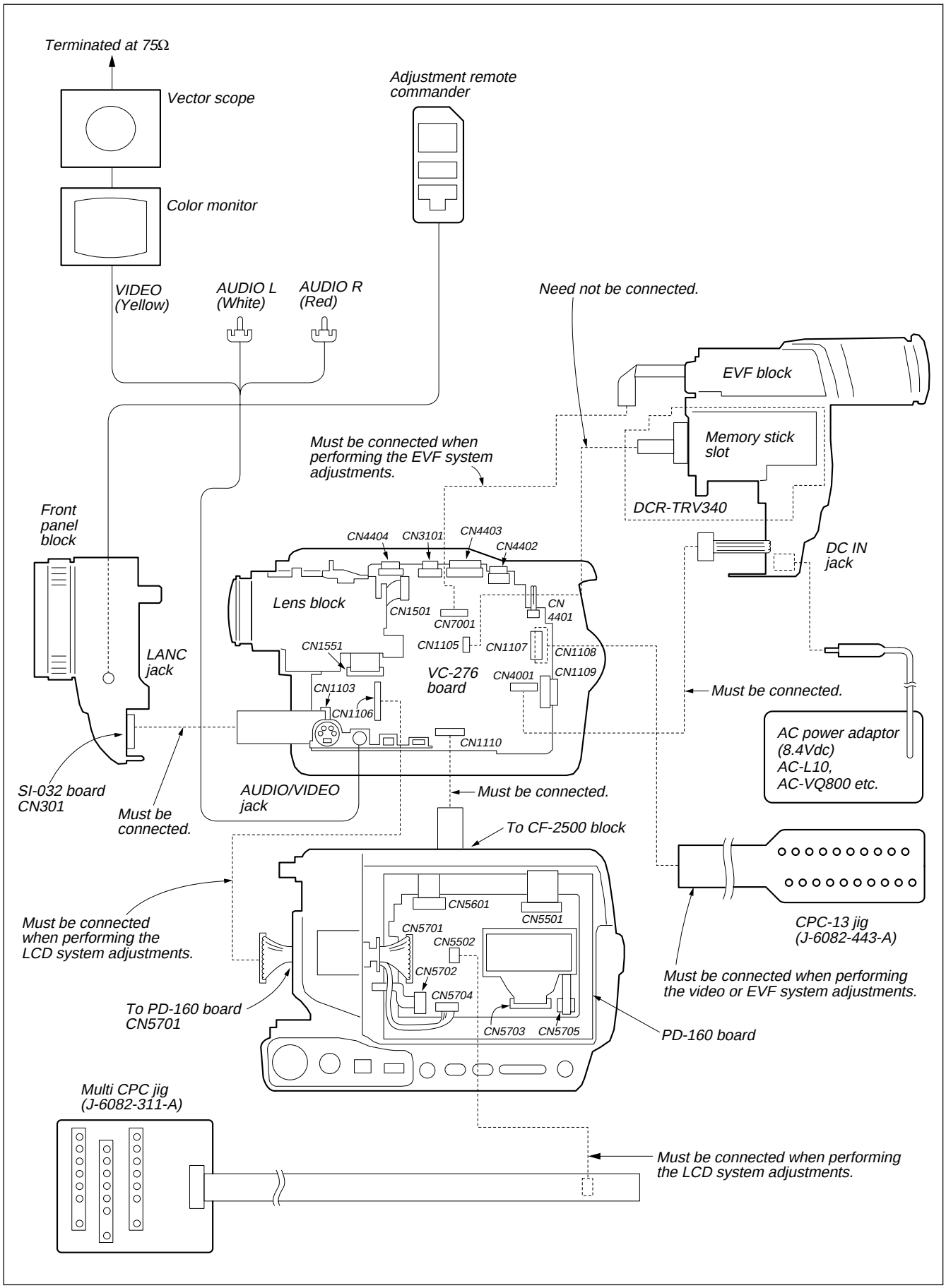

Terminated at 75Ω
Vector scope
Color monitor
Adjustment remote commander
VIDEO (Yellow)
AUDIO L (White)
AUDIO R (Red)
Need not be connected.
EVF block
Memory stick slot
DCR-TRV340
DC IN jack
Must be connected when performing the EVF system adjustments.
Front panel block
LANC jack
CN4404
CN3101
CN4403
CN4402
Lens block
CN1501
CN7001
CN 4401
CN1551
CN1105
CN1107
CN1108
VC-276 board
CN4001
CN1109
CN1103
CN1106
CN1110
Must be connected.
AC power adaptor (8.4Vdc) AC-L10, AC-VQ800 etc.
SI-032 board CN301
Must be connected.
AUDIO/VIDEO jack
Must be connected.
To CF-2500 block
Must be connected when performing the LCD system adjustments.
CN5601
CN5501
CN5701
CN5502
CN5702
CN5704
CN5703
CN5705
CPC-13 jig (J-6082-443-A)
Must be connected when performing the video or EVF system adjustments.
To PD-160 board CN5701
PD-160 board
Multi CPC jig (J-6082-311-A)
Must be connected when performing the LCD system adjustments.

Fig. 5-1-3.

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER switch (SS-1380 block) ..... CAMERA
2. NIGHT SHOT switch (Lens block) ..... OFF
3. DEMO MODE (Menu display) ..... OFF
4. DIGITAL ZOOM (Menu display) ..... OFF
5. STEADY SHOT (Menu display) ..... OFF
6. DISPLAY (Menu display) ..... V-OUT/LCD
7. DISPLAY (CF-2500 block) ..... ON
8. FOCUS switch (CF-2500 block) ..... MANUAL
9. BACK LIGHT (CF-2500 block) ..... OFF
10. PROGRAM AE (Menu display) ..... OFF
11. PICTURE EFFECT (Menu display) ..... OFF
12. DIGITAL EFFECT (Menu display) ..... OFF
13. AUTO SHUTTER (Menu display) ..... OFF
14. 16 : 9 WIDE (MENU display) ..... OFF
15. SUPER NIGHT SHOT (FK-2500 block) ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

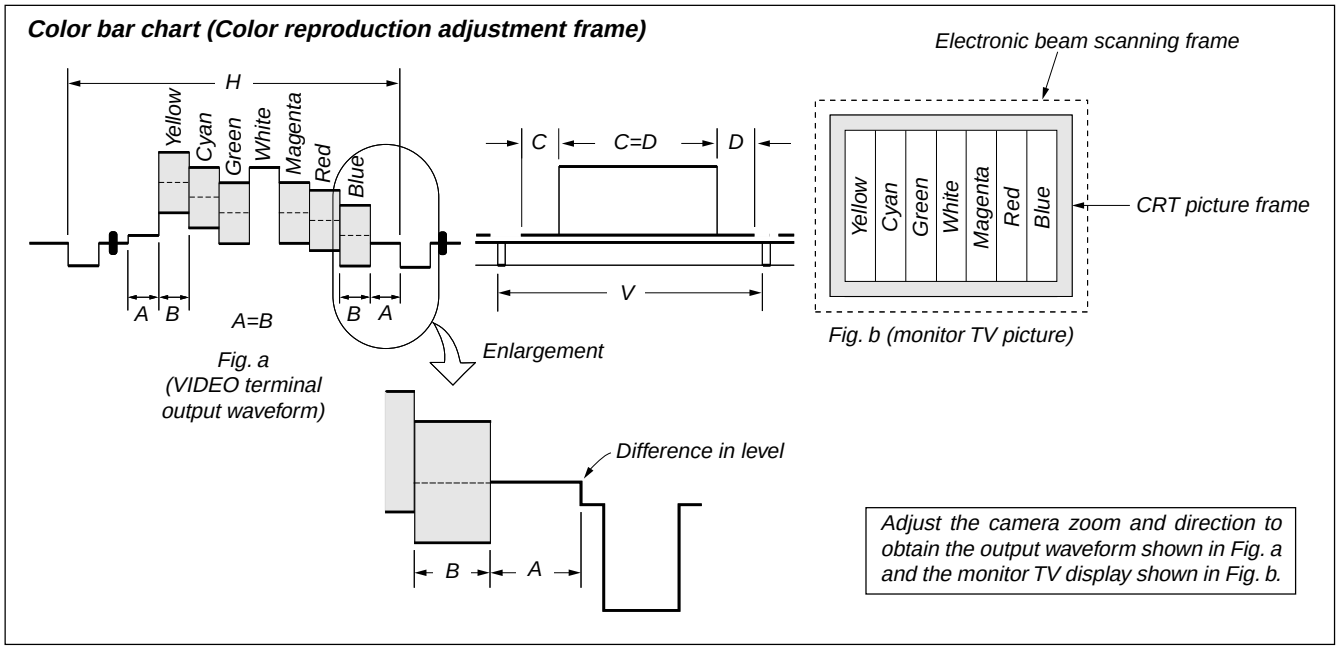


Fig.5-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

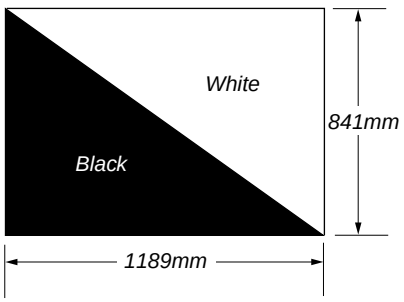


Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1C, 1F PAGE DATA

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B. 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: The A, B and 1B page are DCR-TRV340 model only.

[Connection of the power supply during the initialization of the data.]

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-6.
2) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1Vdc.
3) Turn off the power supply.
4) Turn on the HOLD switch of the adjusting remote commander.
5) Turn on the power supply.
6) Perform the initialization of the data.

Note3: This is normal though the following message is indicated on the LCD screen.
"FOR InfoLITHIUM BATTERY ONLY"

[Initialization Procedure]

DCR-TRV240 :

1. Initialization of D page data
2. Initialization of 8, C, 1C page data
3. Initialization of E, F, 1F page data

DCR-TRV340 :

1. Initialization of A, D page data
2. Initialization of B, 1B page data
3. Initialization of 8, C, 1C page data
4. Initialization of E, F, 1F page data

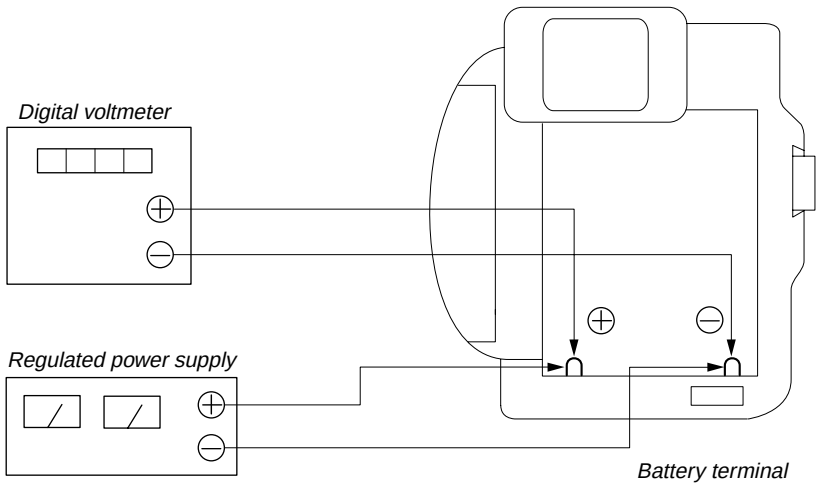


Fig. 5-1-6.

1-2-1. INITIALIZATION OF D PAGE DATA (DCR-TRV240)

Note: The data of page: 0, address: 10 must be “00”.

1. Initializing the D Page Data

Note1: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data

Note2: The power supply voltage must be 6.1 ± 0.1Vdc.

Adjusting page	D
Adjusting Address	10 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	0	10	00	Set the data
3	2	00	2D	Set the data
4	2	01	2D	Set the data, and press the PAUSE button.
5	2	02		Check that the data changes to “01”
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform “Modification of D Page Data”.

2. Modification of D Page Data

If the D page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of D Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data
2	2	01	29	Set the data, and press the PAUSE button.

Note: If the following symptoms occur after completing of the “Modification of D page data”, check that the data of the “Fixed data-2” addresses of D page are same as those of the same model of the same destination.
1) The self-diagnosis code “E:20:00” is displayed on the LCD screen.
2) The power is shut off so that unit cannot operate.

3. D Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the D Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of D Page Data”.)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11		Fixed data-1
12		Fixed data-2
13 to 32		Fixed data-1
33		Fixed data-2
34 to 42		Fixed data-1
43		Fixed data-2
44		
45		
46		Fixed data-1
47		Fixed data-2
48		Fixed data-1
49		Fixed data-2
4A to 4C		Fixed data-1
4D		Fixed data-2
4E to 4F		Fixed data-1
50		Fixed data-2
51		(Modified data. Copy the data built in
52		the same model.)
53		
54		
55 to 57		Fixed data-1
58		Fixed data-2
59		(Modified data. Copy the data built in
5A		the same model.)
5B		
5C		
5D to 64		Fixed data-1
65		Fixed data-2
66		Fixed data-1
67		Fixed data-2
68		
69 to 6B		Fixed data-1
6C		Fixed data-2
6D		(Modified data. Copy the data built in
6E		the same model.)
6F		
70 to 77		Fixed data-1
78		Fixed data-2
79		(Modified data. Copy the data built in
7A		the same model.)
7B		
7C		
7D to 8D		Fixed data-1
8E		Fixed data-2
8F		
90 to B6		Fixed data-1
B7		Fixed data-2
B8 to CF		Fixed data-1
D0	00	Drum rotation counted time.
D1	00	(Refer to “4-3. SERVICE MODE”.)
D2 to FF		Fixed data-1

Table. 5-1-2.

1-2-2. INITIALIZATION OF A, D PAGE DATA (DCR-TRV340)

Note: The data of page: 0, address: 10 must be "00".

1. Initializing the A, D Page Data

Note1: If "Initializing the A, D Page Data" is performed, all data of the A page and D page will be initialized. (It is impossible to initialize a single page.)

Note2: If the A, D page data has been initialized, the following adjustments need to be performed again.
1) Modification of A, D page data

Note3: The power supply voltage must be 6.1 ± 0.1Vdc.

Adjusting page	D
Adjusting Address	10 to 67
Adjusting page	A
Adjusting Address	10 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	0	10	00	Set the data
3	7	03	00	Set the data
4	7	00	28	Set the data
5	7	01	28	Set the data, and press the PAUSE button.
6	7	02		Check that the data changes to "01"
7	2	00	29	Set the data
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform "Modification of A, D Page Data".

2. Modification of A, D Page Data

If the A, D page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of A, D Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

Note: If the following symptoms occur after completing of the "Modification of A, D page data", check that the data of the "Fixed data-2" addresses of D page are same as those of the same model of the same destination.
1) The self-diagnosis code "E: 20:00" is displayed on the LCD screen.
2) The power is shut off so that unit cannot operate.

3. D Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, D Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, D Page Data".)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 15		Fixed data-1
16		Fixed data-2
17 to 21		Fixed data-1
22		Fixed data-2 (Modified data. Copy the data built in the same model.)
23		
24		
25		
26		
27 to 29		Fixed data-1
2A		Fixed data-2
2B		
2C to 36		Fixed data-1
37		Fixed data-2
38 to 39		Fixed data-1
3A		Fixed data-2
3B to 49		Fixed data-1
4A		Fixed data-2 (Modified data. Copy the data built in the same model.)
4B		
4C		
4D		
4E		
4F to 67		Fixed data-1

Table. 5-1-3.

4. A Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, D Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, D Page Data".)

Address	Remark
00 to 0F	
10 to 17	Fixed data-1
18	Fixed data-2
19 to FF	Fixed data-1

Table. 5-1-4.

1-2-3. INITIALIZATION OF B, 1B PAGE DATA (DCR-TRV340)

Note: When reading or writing the B page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the B, 1B Page Data

Note1: If "Initializing the B, 1B Page Data" is performed, all data of the B page and 1B page will be initialized. (It is impossible to initialize a single page.)

Note2: If the B, 1B page data has been initialized, the following adjustments need to be performed again.
1) Modification of B, 1B page data

Note3: The power supply voltage must be 6.1 ± 0.1Vdc.

Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	1B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	02	FF	Set the data.
4	5	01	F3	Set the data, and press PAUSE button.
5	5	00	01	Set the data, and press PAUSE button.
6	5	02		Check that the data changes to "00".
7	2	00	29	Set the data
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform "Modification of B, 1B Page Data".

2. Modification of B, 1B Page Data

If the B, 1B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the B page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1B page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 1B page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of B, 1B Page data:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. Loader writing inhibit mode setting

When replacing the IC4903 (EEPROM), set the loader writing inhibit mode.

Setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	0E	00	Set the data, and press PAUSE button.
4	5	03	20	Set the data, and press PAUSE button.
5	5	01	FA	Set the data, and press PAUSE button.
6	5	00	01	Set the data, and press PAUSE button.
7	5	0E		Check that the data is "01".
8	2	00	29	Set the data.
9	2	01	29	Set the data, and press PAUSE button.

4. B Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Address	Remark
00 to 8C	Fixed data-1
8D	Fixed data-2
8E to FF	Fixed data-1

Table. 5-1-5.

5. 1B Page Table

Note1: When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Address	Remark
00 to FF	Fixed data-1

Table. 5-1-6.

1-2-4. INITIALIZATION OF 8, C, 1C PAGE DATA

Note: When reading or writing the 8, C page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the 8, C, 1C Page Data

Note1: If "Initializing the 8, C, 1C Page Data" is performed, all data of the 8 page, C page and 1C page will be initialized. (It is impossible to initialize a single page.)

Note2: If the 8, C, 1C page data has been initialized, following adjustments need to be performed again.
1) Modification of 8, C, 1C page data
2) Serial No. input
3) Viewfinder system adjustments
4) LCD system adjustments
5) Servo and RF system adjustments
6) Video system adjustments
7) Audio system adjustments

Note3: The power supply voltage must be 6.1 ± 0.1Vdc.

Adjusting page	8
Adjusting Address	00 to A3
Adjusting page	C
Adjusting Address	10 to FF
Adjusting page	1C
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	3	81	10	Set the data.
4	3	80	0C	Set the data, and press PAUSE button.
5	3	80		Check that the data changes to "1C".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of 8, C, 1C Page Data".

2. Modification of 8, C, 1C Page Data

If the 8, C, 1C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the 8, C page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1C page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 1C page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of 8, C, 1C Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. C Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C, 1C Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C, 1C Page Data".)

Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 15		Fixed data-1
16	E0	Hi8/std8 CAP FG duty adj.
17	E0	Reel FG adj.
18	20	AEQ adj.
19	20	
1A		Fixed data-1
1B	25	AEQ adj.
1C	25	
1D		Fixed data-1
1E	25	AGC center level adj.
1F	3E	PLL fo adj.
20	3E	
21	CA	APC adj.
22	99	LPF fo adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.

C page

Address	Initial value	Remark
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28		Fixed data-2
29	20	PLL fo adj.
2A to 2B		Fixed data-1
2C	03	APC adj.
2D		Fixed data-1
2E		Fixed data-2
2F	E0	Reel FG adj.
30 to 3F		Fixed data-1
40	0A	Hi8/std8 switching position adj.
41	00	
42		Fixed data-1
43	50	Hi8/std8 AFC fo adj.
44	69	Hi8/Std8 Y/C output level set
45	64	
46 to 4B		Fixed data-1
4C	A6	Hi8/std8 AFM 1.5MHz deviation adj.
4D	94	Hi8/std8 AFM 1.7MHz deviation adj.
4E	80	Hi8/std8 AFM BPF fo adj.
4F		Fixed data-2
50		
51	61	VCO adj. (EVF)
52	76	
53		Fixed data-1
54	9D	RGB AMP adj. (EVF)
55 to 57		Fixed data-1
58	2B	Contrast adj. (EVF)
59		Fixed data-1
5A		Fixed data-2
5B to 5E		Fixed data-1
5F		Fixed data-2
60		
61	5C	VCO adj. (LCD)
62	70	
63	21	V-COM adj. (LCD)
64	9D	RGB AMP adj. (LCD)
65	08	Black limit adj. (LCD)
66	3D	PSIG gray adj. (LCD)
67	7E	White balance adj. (LCD)
68	6C	
69	20	Contrast adj. (LCD)
6A	37	Center level adj. (LCD)
6B		Fixed data-2
6C		
6D		Fixed data-1
6E		Fixed data-2
6F to 81		Fixed data-1
82		Fixed data-2
83 to 85		Fixed data-1
86		Fixed data-2
87 to 88		Fixed data-1
89		Fixed data-2
8A		
8B to AE		Fixed data-1

Address	Initial value	Remark
AF		Fixed data-2
B0 to E1		Fixed data-1
E2		Fixed data-2
E3		
E4 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

Table. 5-1-7.

4. 8 Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 1C Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, C, 1C Page Data”.)

Address	Initial value	Remark
00 to 18		Fixed data-1
19		Fixed data-2
20 to 34		Fixed data-1
35		Fixed data-2
36 to 49		Fixed data-1
4A		Fixed data-2
4B to 79		Fixed data-1
7A		Fixed data-2 (Modified data. Copy the data built in the same model.)
7B		
7C		
7D		
7E		
7F		
80		
81		
82		
83		
84 to 89		Fixed data-1
8A		Fixed data-2
8B		Fixed data-1
8C	08	Serial No. input
8D	00	
8E	46	
8F	01	
90	02	
91	00	
92	00	
93	00	
94 to A3		Fixed data-1

Table. 5-1-8.

5. 1C Page Table

Note1: When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 1C Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, C, 1C Page Data”.)

Address	Remark
00 to 49	Fixed data-1
4A	Fixed data-2
4B to FF	Fixed data-1

Table. 5-1-9.

1-2-5. INITIALIZATION OF E, F, 1F PAGE DATA

Note: When reading or writing the E, F page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the E, F, 1F Page Data

Note1: If "Initializing the E, F, 1F Page Data" is performed, all data of the E page, F page and 1F page will be initialized. (It is impossible to initialize a single page.)

Note2: If the E, F, 1F page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 1F page data
2) 27MHz origin osc. Adj.
3) Camera system adjustments

Note3: The power supply voltage must be 6.1 ± 0.1Vdc.

Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	1F
Adjusting Address	00 to D9

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01	2D	Set the data, and press PAUSE button.
4	6	03	01	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of E, F, 1F Page Data".

2. Modification of E, F, 1F Page Data

If the E, F, 1F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the E, F page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1F page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 1F page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 1F Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. F Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1F Page Data".)

Address	Initial value	Remark
00 to 0F		
10 to 11		Fixed data-1
12	80	27MHz origin osc. Adj.
13 to 16		Fixed data-1
17	81	HALL adj.
18	5D	
19	8A	
1A to 1D		Fixed data-1
1E	80	AWB & LV standard data input
1F	7A	
20 to 29		Fixed data-1
2A	4D	AWB & LV standard data input
2B	3E	
2C	64	
2D	59	
2E	96	Auto white balance adj.
2F	7A	
30 to 32		Fixed data-1
33	22	Color reproduction adj.
34		Fixed data-1
35	27	Color reproduction adj.
36 to 39		Fixed data-1

F page

Address	Initial value	Remark
3A	00	Color reproduction adj.
3B	F1	
3C to 45		Fixed data-1
46	2A	Flange back adj.
47	18	
48	37	
49	0D	
4A	13	
4B	08	
4C	00	
4D	00	
4E	00	
4F	00	
50	6E	
51	19	
52	00	
53	19	
54	04	
55	00	
56	00	
57 to 5B		Fixed data-1
5C		Fixed data-2
5D		
5E	00	Optical axis adj.
5F to 8D		Fixed data-1
8E		Fixed data-2
8F to 93		Fixed data-1
94		Fixed data-2
95 to 99		Fixed data-1
9A		Fixed data-2
9B to C7		Fixed data-1
C8		Fixed data-2
C9 to D6		Fixed data-1
D7		Fixed data-2
D8 to ED		Fixed data-1
EE		Fixed data-2
EF to F6		Fixed data-1
F7		Fixed data-2
F8 to FF		Fixed data-1

Table. 5-1-10.

4. E Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 1F Page Data”.)

Address	Remark
00 to 05	Fixed data-1
06	Fixed data-2
07	
08 to 35	Fixed data-1
36	Fixed data-2
37 to 9B	Fixed data-1
9C	Fixed data-2
9D	Fixed data-1
9E	Fixed data-2 (Modified data. Copy the data built in the same model.)
9F	
A0	
A1	
A2 to AA	Fixed data-1
AB	Fixed data-2
AC to BE	Fixed data-1
BF	Fixed data-2
C0	
C1	Fixed data-1
C2	Fixed data-2
C3	Fixed data-1
C4	Fixed data-2
C5 to E9	Fixed data-1
EA	Fixed data-2
EB	
EC to FF	Fixed data-1

Table. 5-1-11.

5. 1F Page Table

Note1: When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 1F Page Data”.)

Address	Remark
00 to 51	Fixed data-1
52	Fixed data-2
53 to 5A	Fixed data-1
5B	Fixed data-2
5C to 64	Fixed data-1
65	Fixed data-2
66	
67 to D8	Fixed data-1
D9	Fixed data-2

Table. 5-1-12.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. HALL Adjustment RadarW

For detecting the position of the lens iris, adjust AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	17, 18, 19
Specified Value 1	89 to 8D
Specified Value 2	15 to 19

Note1: Displayed data of page 1 of the adjustment remote commander.
1 : 00 : XX
└——— IRIS display data

Note2: The data of page: 0, address: 10 must be "00".

Switch setting:

POWER ..... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	8B	Set the data.
3	6	95	17	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note3)
6	6	01	00	Set the data, and press PAUSE button.

Note3: The adjustment data will be automatically input to page: F, address: 17, 18, 19.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value 2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	94	00	Set the data.
2	6	95	00	Set the data.
3	0	03	00	Set the data.
4	6	01	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

2. Flange Back Adjustment (Using Minipattern Box) RadarW

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	46 to 56

Note1: Dark Siemens star chart.
Note2: This adjustment should be carried out upon completion of "HALL adjustment".
Note3: Make the lens horizontal and perform this adjustment.
Note4: The data of page: 0, address: 10 must be "00".
Note5: Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) SLOW SHUTTER/SUPER NIGHT SHOT ..... OFF

Preparations:

1) The minipattern box is installed as shown in the following figure.
   Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

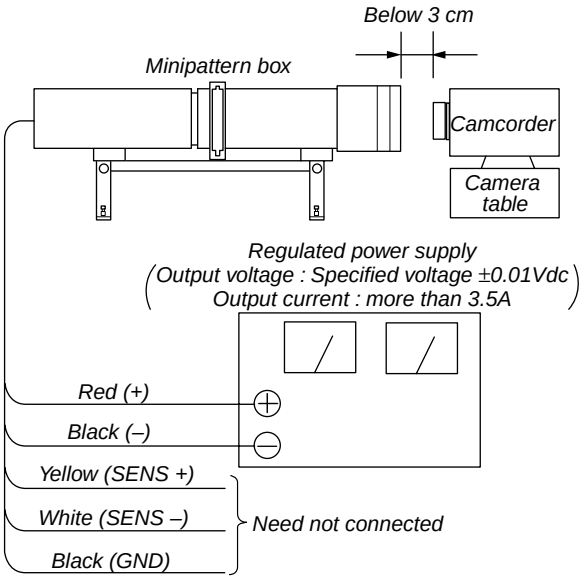


Fig. 5-1-7.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	27	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note6)

Note6: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	48	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform "Flange Back Check".

3. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

3-1. Flange Back Adjustment (1) RadarW

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 50 lux)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	46 to 56

Note1: This adjustment should be carried out upon completion of "HALL adjustment".
Note2: Make the lens horizontal and perform this adjustment.
Note3: The data of page: 0, address: 10 must be "00".
Note4: Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) SLOW SHUTTER/SUPER NIGHT SHOT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	15	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1				Turn off the power and turn on again.
2				Perform "Flange Back Adjustment (2)"

3-2. Flange Back Adjustment (2) RadarW

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	46 to 56

Note1: Make the lens horizontal and perform this adjustment.
Note2: The data of page: 0, address: 10 must be "00".
Note3: Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) SLOW SHUTTER/SUPER NIGHT SHOT ..... OFF

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4				Place a ND filter on the lens so that the optimum image is obtain.
5	6	01	29	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	48	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform "Flange Back Check".

4. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Note: The data of page: 0, address: 10 must be “00”.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) SLOW SHUTTER/SUPER NIGHT SHOT ..... OFF

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.
1) Select page: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.
1 : 00 : XX
Odd: Focused
Even: Unfocused

Checking method:

1) Select page: 6, address: 40, and set data: 01.
2) Select page: 6, address: 41, and set data: 01.
3) Place the Siemens star 2.0m from the front of the lens.
4) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
5) Shoot the Siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note).
8) Select page: 6, address: 21, and set data: 10.
9) Shoot the Siemens star with the zoom WIDE end.
10) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

5. Optical Axis Adjustment

Align the lens Optical Axis with that of the CCD imager. If deviated, center of picture can lose focus when zoom is operated from the WIDE end to the TELE end.

Subject	Siemens star
Measurement Point	Check on the monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	5E

Note1: This adjustment should be carried out upon completion of "Flange back adjustment".
Note2: The data of page: 0, address: 10 must be "00".
Note3: Check that the data of page: 6, address: 48 is "00". If not, set data: 00 to this address.

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Preparations before adjustments:

1) Playback the monoscope segment of the system check tape (WR5-5ND).
2) Attach the optical axis frame chart (transparent) on the monitor TV screen. Center of monoscope image and that that of optical axis frame must be agree.
3) Set to the camera mode.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 5E, set data: 00, and press the PAUSE button.
3) Place the Siemens star 2.0 m away from the front of the lens.
4) Shoot the Siemens star with the zoom TELE end.
5) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
6) Shoot the Siemens star with the zoom WIDE end.
7) Measure on the monitor TV screen in which area of the optical axis frame the center of the Siemens star is located. Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L1.
8) Read the correction data corresponding to the area from Table 5-1-13.
9) Input the correction data to page: F, address: 5E, and press the PAUSE button
10) Shoot the Siemens star with the zoom TELE end.
11) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
12) Shoot the Siemens star with the zoom WIDE end.
13) Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L2.
14) Compare the values L1 and L2, and confirm that L2 is smaller than L1. If L2 is lager than L1, select page: F, address: 5E, set data: 00, and press the PAUSE button.

Area	Display phase	Correction data Page: F, Address: 5E
1	22.6° to 67.5°	01
2	67.6° to 112.5°	02
3	112.6° to 157.5°	03
4	157.6° to 202.5°	04
5	202.6° to 247.5°	05
6	247.6° to 292.5°	06
7	292.6° to 337.5°	07
8	337.6° to 22.5°	08

Table 5-1-13.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.

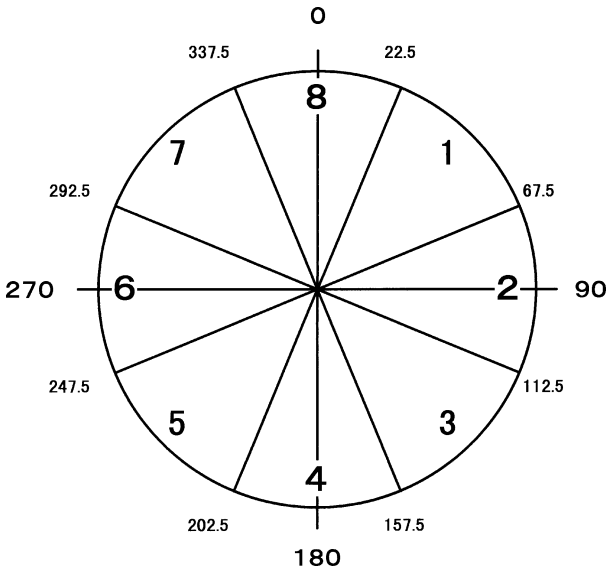


Fig. 5-1-8.

6. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note1: The following adjustments should be carried out upon completion of "Flange back adjustment".
Note2: The data of page: 0, address: 10 must be "00".

Switch setting:
1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Setting method:
1) Select page: 6, address: 48, and set data: 01.
2) Adjust the zoom and the camera direction, and set to the specified position.
3) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "Color reproduction adjustment frame".

Processing after Completing Camera System Adjustments:
After completing the camera system adjustments, release the data settings.
1) Select page: 6, address: 48, and set data: 00.

Check on the oscilloscope

1. Horizontal period

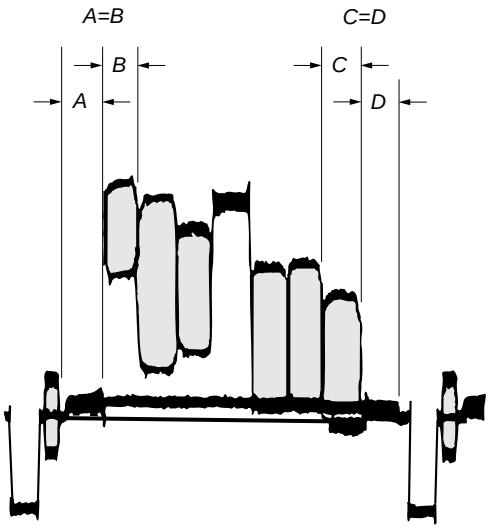


Fig. 5-1-9.

2. Vertical period

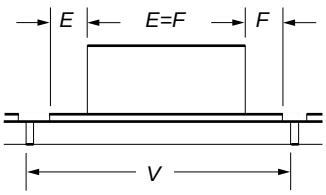


Fig. 5-1-10.

Check on the monitor TV (Underscanned mode)

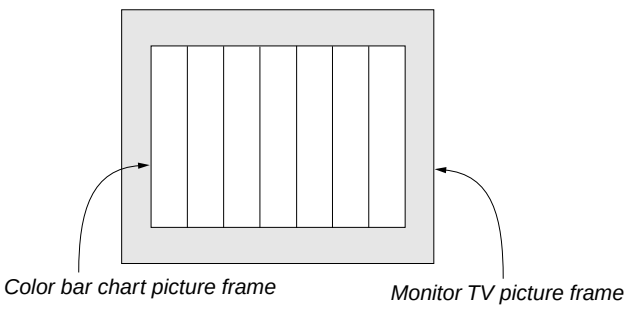


Fig. 5-1-11.

7. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	33, 35, 3A, 3B
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: The data of page: 0, address: 10 must be “00”.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 48, and set data: 01.
3) Select page: 6, address: 9D, set data: 30.
4) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
5) Select page: F, address: D0, set data: 37, and press the PAUSE button.
6) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
7) Change the data of page: F, address: 33, 35, 3A, 3B, settle each color luminance point in each color reproduction frame.
   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 6, address: 48, and set data: 00.
3) Select page: 6, address: 9D, and set data: 00.
4) Select page: 0, address: 01, and set data: 00.

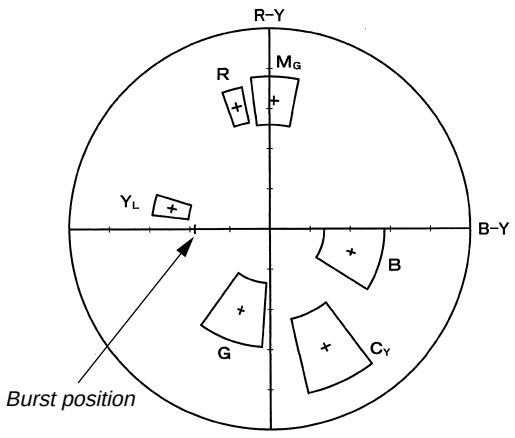


Fig. 5-1-12.

8. Auto White Balance & LV Standard Data Input

Adjust the white balance reference at 3200K, and adjust the normal coefficient of the light value.

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note5)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1E, 1F, 2A to 2D
Specified Value	0FF0 to 1010

Note1: This adjustment should be carried out upon completion of “Color reproduction adjustments”.
Note2: After the power is turned on, this adjustment can be done only once.
Note3: The data of page: 0, address: 10 must be “00”.
Note4: Check that the data of page: 6, address: 02 is “00”. If not, set data: 00 to this address, and press the PAUSE button.
Note5: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└──── Display data

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	16	02	Set the data.
4				Wait for 2 sec.
5	6	01	11	Set the data, and press PAUSE button.
6	6	01	0D	Set the data, and press PAUSE button.n
7	6	02		Check that the data changes to “01”. (Note6)
8	0	03	1E	Set the data.
9	1			Check that the display data (Note5) satisfies the specified value.

Note6: The adjustment data will be automatically input to page: F, address: 1E, 1F and 2A to 2D.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	16	00	Set the data.
3	6	48	00	Set the data.
4	0	01	00	Set the data.
5	0	03	00	Set the data.
6				Perform “Auto White Balance Adjustment”.

9. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F
Specified Value	R ratio: 2BC0 to 2CC0 B ratio: 5920 to 5A20

Note1: This adjustment should be carried out upon completion of "Auto White Balance & LV Standard Data Input".
Note2: After the power is turned on, this adjustment can be done only once.
Note3: The data of page: 0, address: 10 must be "00".
Note4: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└──── Display data

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	6	48	01	Set the data.
4	F	3E		Write down the data.
5	F	3E	2C	Set the data, and press PAUSE button.
6	F	3F		Write down the data.
7	F	3F	40	Set the data, and press PAUSE button.
8	F	40		Write down the data.
9	F	40	59	Set the data, and press PAUSE button.
10	F	41		Write down the data.
11	F	41	A0	Set the data, and press PAUSE button.
12	6	01	83	Set the data, and press PAUSE button.
13	6	01	81	Set the data, and press PAUSE button.
14	6	02		Check that the data changes to "01". (Note5)
15	6	01	3F	Set the data, and press PAUSE button.
16	0	03	04	Set the data.
17	1			Check that the display data (Note4) satisfies the R ratio specified value.
18	0	03	05	Set the data.
19	1			Check that the display data (Note4) satisfies the B ratio specified value.

Note5: The adjustment data will be automatically input to page: F, address: 2E, 2F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	48	00	Set the data.
3	F	3E		Set the data that is written down at step 4, and press PAUSE button.
4	F	3F		Set the data that is written down at step 6, and press PAUSE button.
5	F	40		Set the data that is written down at step 8, and press PAUSE button.
6	F	41		Set the data that is written down at step 10, and press PAUSE button.
7	0	03	00	Set the data.
8	0	01	00	Set the data.

10. White Balance Check RadarW

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-13. A to B

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	48	01	Set the data.
3	6	01	0F	Set the data, and press PAUSE button.
4				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. A.
5	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
6				Place the C14 filter on the lens.
7	6	01	3F	Set the data, and press PAUSE button.
8				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. B.
9				Remove the C14 filter.
				LV data check
10				Place the ND filter 1.5 (1.0 + 0.1 + 0.4) on the lens.
11	6	01	00	Set the data, and press PAUSE button.
12	0	03	06	Set the data.
13	1			Check that the display data (Note) satisfies the specified value. Specified value: 8000 to 8BC0

Note: Displayed data of the adjustment remote commander.

1 : XX : XX
└ Display data

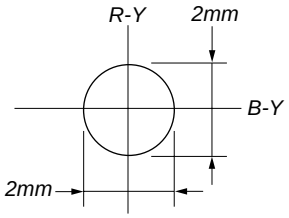


Fig. 5-1-13. (A)

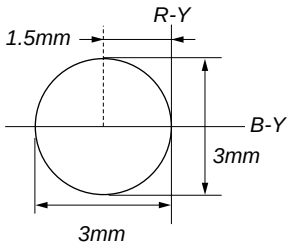


Fig. 5-1-13. (B)

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	48	00	Set the data.
3	0	03	00	Set the data.

11. Steady Shot Check RadarW

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03JA
Type B: ENC03JB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Specified Value	2B00 to 4B00

Note1: Displayed data of the adjustment remote commander.

1 : XX : XX
└──── Display data

Note2: The data of page: 0, address: 10 must be “00”.

Switch setting:

1) STEADY SHOT (Menu display) ..... ON
2) ZOOM ..... TELE end

Adjusting method:

Order	Page	Address	Data	Procedure
				Pitch sensor check (SI-032 board SE301)
1	0	03	11	Set the data.
2	1			Check that the display data (Note1) satisfies the specified value.
				Yaw sensor check (SI-032 board SE302)
3	0	03	12	Set the data.
4	1			Check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	03	00	Set the data.
2				Move the camcorder, and check that the steady shot operations have been performed normally.

1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note3: Switch setting:
LCD panel ..... Close

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN1108 of VC-276 board.
Connect the Measuring Instruments via the CPC-13 jig (J-6082-443-A).
The following table shows the Pin No. and signal name of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-1-14.

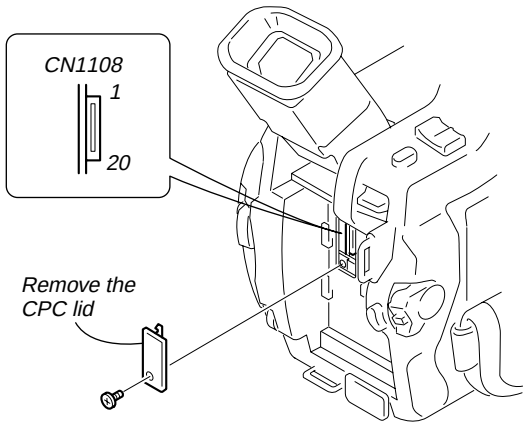


Fig. 5-1-14.

1. VCO Adjustment (VC-276 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑪ of CN1108 (VCO)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	51, 52
Specified Value	f = 15734 ± 30Hz

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	51		Change the data and set the VCO frequency (f) to the specified value.
3	C	51		Press PAUSE button.
4	C	51		Read the data, and this data is named D_{51}.
5				Convert D_{51} to decimal notation, and obtain D_{51}'. (Note1)
6				Calculate D_{52}' using following equations (Decimal calculation) When $D_{51}' \leqq 236$ $D_{52}' = D_{51}' + 19$ When $D_{51}' > 236$ $D_{52}' = 255$
7				Convert D_{52}' to a hexadecimal number, and obtain D_{52}. (Note)
8	C	52	D_{52}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

2. RGB AMP Adjustment (VC-276 board)

Set the D range of the RGB driver used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	54
Specified Value	A = 7.50 ± 0.10V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	54		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	54		Press PAUSE button.
4	0	01	00	Set the data.

3. Contrast Adjustment (VC-276 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	58
Specified Value	A = 2.49 ± 0.10V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	58		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	C	58		Press PAUSE button.
4	0	01	00	Set the data.

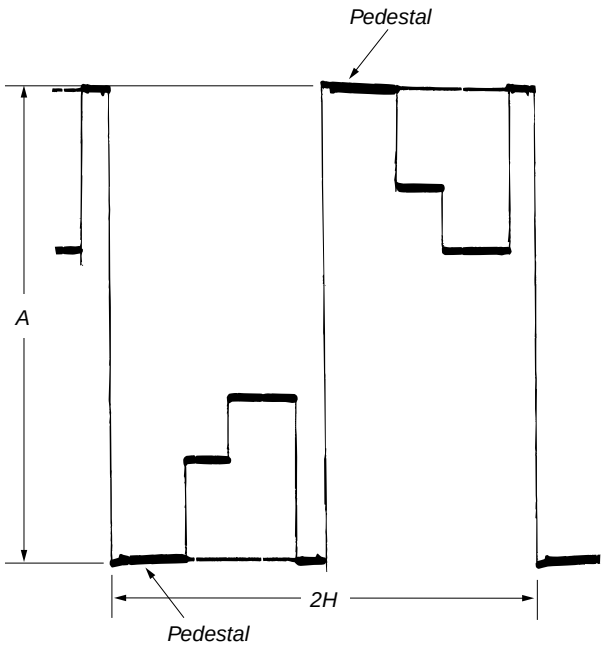


Fig. 5-1-15.

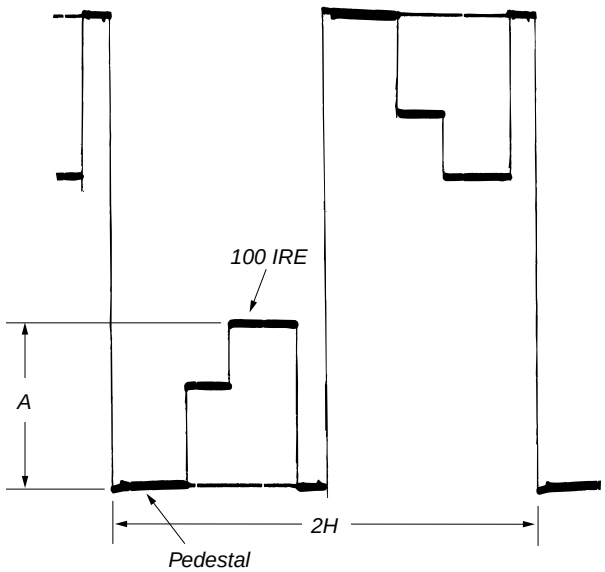


Fig. 5-1-16.

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.
Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note 3: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note 4: Set the LCD BRIGHT (Menu display) to the center.
Set the LCD COLOR (Menu display) to the center.

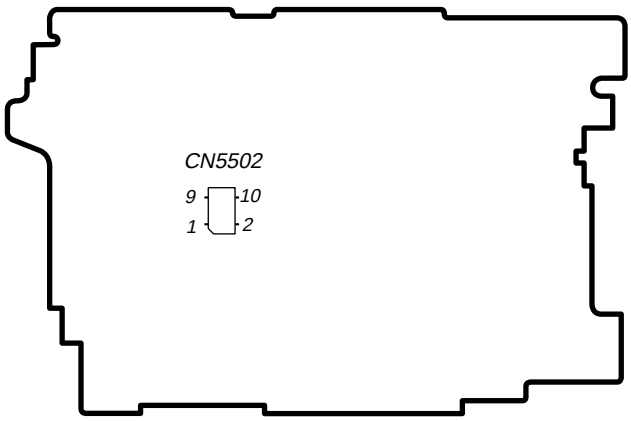
[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN5502 of the PD-160 board. Connect the measuring instruments via the multi CPC jig (J-6082-311-A). The following table shows the Pin No. and signal name of CN5502.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	XVD OUT
3	VG	4	PSIG
5	VR	6	MAKER CHECK
7	XHD	8	XHD OUT
9	GND	10	GND

Table 5-1-15.

PD-160 board



1. VCO Adjustment (PD-160 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑧ of CN5502 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	61, 62
Specified Value	f = 15734 ± 30Hz

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	61		Change the data and set the VCO frequency (f) to the specified value.
3	C	61		Press PAUSE button.
4	C	61		Read the data, and this data is named D_{61}.
5				Convert D_{61} to decimal notation, and obtain D_{61}'. (Note2)
6				Calculate D_{62}' using following equations (Decimal calculation) When $D_{61}' \leqq 238$ $D_{62}' = D_{61}' + 17$ When $D_{61}' > 238$ $D_{62}' = 255$
7				Convert D_{62}' to a hexadecimal number, and obtain D_{62}. (Note2)
8	C	62	D_{62}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

2. PSIG Gray Adjustment (PD-160 board)

Set the uniformity improvement signal to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	66
Specified Value	A = 5.00 ± 0.1V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	66		Change the data and set the PSIG signal level (A) to the specified value. (The data should be "00" to "7F")
3	C	66		Press PAUSE button.
4	0	01	00	Set the data.

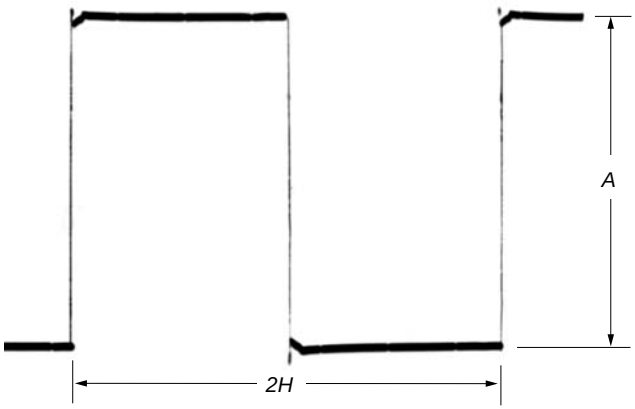


Fig. 5-1-17.

3. RGB AMP Adjustment (PD-160 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	64
Specified Value	A = 7.68 ± 0.05V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	64		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	64		Press PAUSE button.
4	0	01	00	Set the data.

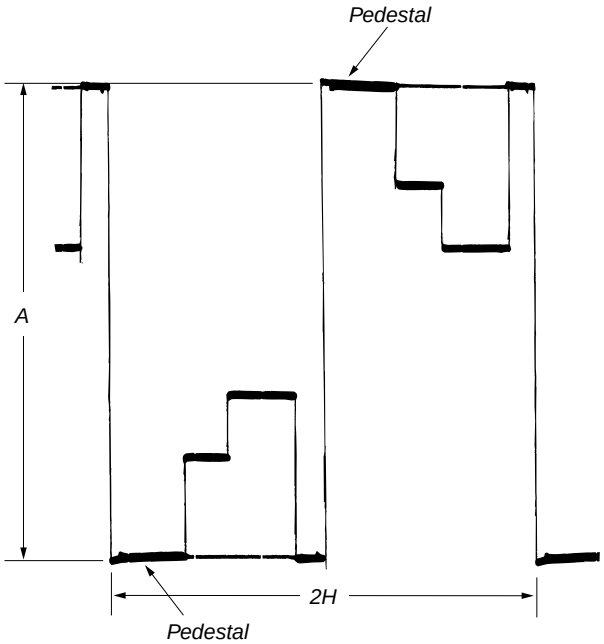


Fig. 5-1-18.

4. Black Limit Adjustment (PD-160 board)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	65
Specified Value	A = 8.30 ± 0.08V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	C4	61	Set the data.
3	3	C5	58	Set the the data.
4	C	65		Change the data and set the PSIG signal amplitude (A) to the specified value. (The data should be "00" to "0F".)
5	C	65		Press PAUSE button.
6	3	C4	00	Set the data.
7	3	C5	00	Set the data.
8	0	01	00	Set the data.
9				Check that the specified value of "RGB AMP Adjustment" is satisfied.

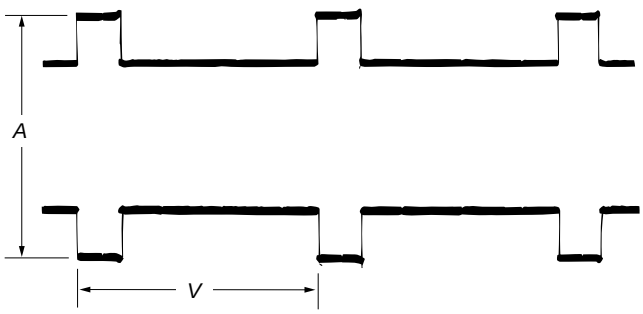


Fig. 5-1-19.

5. Contrast Adjustment (PD-160 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	69
Specified Value	A = 2.72 ± 0.05V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	69		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	C	69		Press PAUSE button.
4	0	01	00	Set the data.

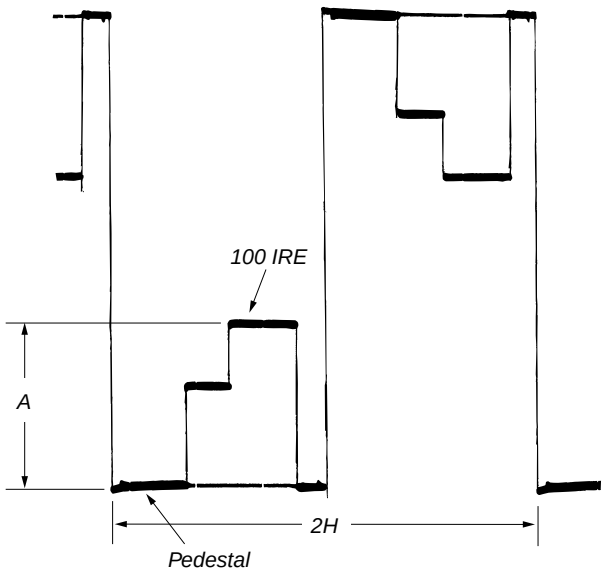


Fig. 5-1-20.

6. Center Level Adjustment (PD-160 board)

Set the video signal center level of LCD panel to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	C
Adjustment Address	6A
Specified Value	A = 7.00 ± 0.03Vdc

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	6A		Change the data and set the DC voltage (A) to the specified value. (The data should be "00" to "7F".)
3	C	6A		Press PAUSE button.
4	0	01	00	Set the data.

7. V-COM Adjustment (PD-160 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	C
Adjustment Address	63
Specified Value	The brightness difference between the section A and section B is minimum.

Note1: This adjustment should be carried out upon completion of the following adjustments.
RGB AMP Adjustment
Black Limit Adjustment
Contrast Adjustment
Center Level Adjustment

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	63		Change the data so that the brightness of the section A and that of the section B is equal. (The data should be "00" to "3F".)
3	C	63		Subtract 2 from the data.
4	C	63		Press PAUSE button.
5	0	01	00	Set the data.

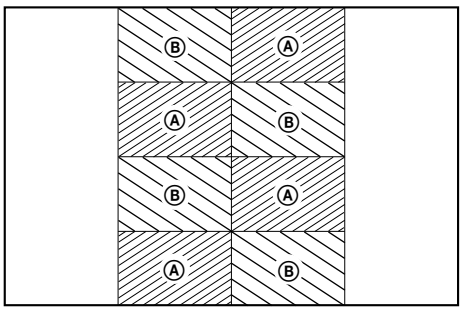


Fig. 5-1-21.

8. White Balance Adjustment (PD-160 board)

Correct the white balance.
If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	67, 68
Specified Value	The LCD screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC5501

Note2: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	67	7E	Set the data, and press PAUSE button.
3	C	68	6C	Set the data, and press PAUSE button.
4	C	68		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	C	67		Change the data so that the LCD screen is not colored.
6	C	67		Press PAUSE button.
7	C	68		Change the data so that the LCD screen is not colored.
8	C	68		Press PAUSE button.
9	C	68		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

5-2. MECHANISM SECTION ADJUSTMENT

Mechanism Section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "8mm Video Mechanism Adjustment Manual M2000 Mechanism".

2-1. Hi8/STANDARD 8 MODE

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

2-1-1. OPERATING WITHOUT CASSETTE

1) Refer to "Section 2. DISASSEMBLY" and supply the power with the cabinet assembly removed. (So that the mechanical deck can be operated.)
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Select page: 0, address: 01, and set data: 01.
6) Select page: C, address: 3E, set data: 01, and press the PAUSE button of the adjustment remote commander.
7) Select page: <D>[A], address: 10, set data: 10, and press the PAUSE button. (Note2)
8) Disconnect the power supply of the unit, and connect it again.
9) Select page: <2>[7], address: <4D>[62], and set data: <80>[02]. (Note2)
   By carrying out the above procedure, the unit can be operated without loading a cassette. (Note3)
   Be sure to carry out "Processing after Operations" after checking the operations.
   Set the data of page: D, address: 10 to "<12>[02]", if the sensor ineffective mode, forced VTR power supply ON mode is to be used together. (Note2)
   Note3: Except for the camera recording mode and VTR recording mode.

[Procedure after checking operations]

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 3E, set data: 00, and press the PAUSE button.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button.
4) Select page: A, address: 10, set data: 00, and press the PAUSE button. (DCR-TRV340)
5) Select page: <2>[7], address: <4D>[62], and set data: 00. (Note2)
6) Select page: 0, address: 01, and set data: 00.
7) Disconnect the power supply of the unit.

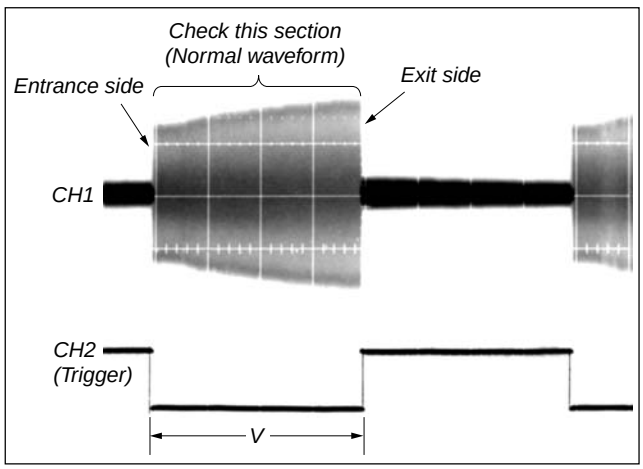


Fig. 5-2-1.

2-1-2. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

1) Clean the tape path face (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: <2>[7], address: <4D>[62], and set data: <80>[02]. (Note2)
6) Select page: C, address: 3E, set data: 08, and press the PAUSE button of the adjustment remote commander.
   (Be sure to perform "Processing after operation" after completing adjustments.)
7) Connect the oscilloscope to VC-276 board CN1108 via CPC-13 jig (J-6082-443-A).
   Channel 1: VC-276 board, CN1108 Pin ⑤
   External trigger: VC-276 board, CN1108 Pin ⑧
8) Playback Hi8/standard 8mm alignment tape for tracking. (WR5-1NP)
9) Check that the oscilloscope RF waveform is normal at the entrance and exit. (Fig. 5-2-1.)
   If not normal, adjust according to the separate volume "8mm Video Mechanical Adjustment Manual M2000 Mechanism".
10) Perform "Processing after operations", after completing adjustment.

CN1108 of VC-276 board

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-2-1.

[Procedure after operations]

1) Connect the adjustment remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: <2>[7], address: <4D>[62], and set data: 00.(Note2)
4) Select page: C, address: 3E, set data: 00, and press the PAUSE button.
5) Select page: 0, address: 01, and set data: 00.
6) Remove the power supply from the unit.

2-2. DIGITAL8 MODE

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

2-2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-2-3. OVERALL TAPE PATH CHECK

1. Recording of the tape path check signal

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Set to the camera recording mode.
5) Select page: 3, address: 1C, set data: 5D, and press the PAUSE button of the adjustment remote commander.
6) Record for several minutes.
7) Release the camera recording mode.
8) Select page: 3, address: 1C, set data: 00, and press the PAUSE button.

2. Tape path check

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-276 board CN1108 via the CPC-13 jig (J-6082-443-A).
   Channel 1: VC-276 board, CN1108 Pin ⑯ (Note)
   External trigger: VC-276 board, CN1108 Pin ⑬
   Note: Connect a 75Ω resistor between Pins ⑯ of CN1108 and ⑥ (GND).
5) Select page: <2>[7], address: <4D>[62], and set data: <40>[01]. (Note2)
6) Playback the tape path check signal.
7) Select page: 3, address: 26, and set data: 31.
8) Select page: 3, address: 33, and set data: 08.
9) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, perform "2-1-2. TAPE PATH ADJUSTMENT" of "2-1. HI8/STANDARD 8mm MODE".
10) Select page: 3, address: 26, and set data: 00.
11) Select page: 3, address: 33, and set data: 00.
12) Select page: <2>[7], address: <4D>[62], and set data: 00. (Note2)

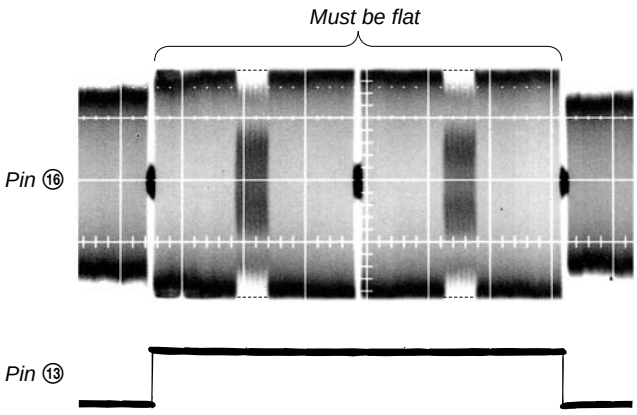


Fig. 5-2-2.

5-3. VIDEO SECTION ADJUSTMENT

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Digital8 alignment tapes
    - SW/OL standard (WR5-2D)
      Parts code: 8-967-993-22
    - Audio operation check for NTSC (WR5-3ND)
      Parts code: 8-967-993-32
    - System operation check for NTSC (WR5-5ND)
      Parts code: 8-967-993-42
12) Hi8/standard8 alignment tapes
    - For tracking adjustment (WR5-1NP)
      Parts code : 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE)
      Parts code : 8-967-995-13
    - For checking Standard 8 mode operations
      For LP (WR5-4NL)
      Parts code : 8-967-995-51
      For SP (WR5-5NSP)
      Parts code : 8-967-995-42

    Note : The following alignment tapes can also be used.
    WR5-4NSP (8-967-995-41)

    - For checking Hi8 mode operations
      For LP (WR5-8NLE)
      Parts code : 8-967-995-52
      For SP (WR5-8NSE)
      Parts code : 8-967-995-43
    - For Checking AFM stereo operations (WR5-9NS)
      Parts code : 8-967-995-23
    - For BPF adjustment (WR5-11NS)
      Parts code : 8-967-995-71
13) Adjustment remote commander (J-6082-053-B)
14) CPC-13 jig (J-6082-443-A)

3-1-2. Precautions on Adjusting

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to "VCR or PLAYER" or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note2).
   To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON mode" using the adjustment remote commander (Note3).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note4)
2) The front panel block (SI-032 board (Microphone amp, remote commander receiver), FP-411 flexible (MIC jack, Head phone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjustment remote commander.
   To remove it, disconnect the following connector.
   VC-276 board CN1103 (30P 0.5mm)
3) Only for DCR-TRV240 model, as removing the cabinet (R) assembly (removing CN1110 of the VC-276 board) means removing the lithium 3V power supply (BT001 on the CF-2500 block), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) assembly has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page: 2, address: B0 to C6) and the data on history use (data of page: 2, address: A5 to AA). (Refer to "5-4.Service Mode".)
4) The cabinet (R) assembly (CF-2500 block, LCD bock) need not be connected to operate the VTR block. (Use the adjustment remote commander, to operate the VTR block.) When removing the cabinet (R) assembly, disconnect the following connector.
   1. VC-276 board CN1110 (22P, 0.5mm)
   2. VC-276 board CN1106 (20P, 0.8mm)
5) The memory stick connector is need not be connected. To remove it, disconnect the following connector. (DCR-TRV340)
   VC-276 board CN1105 (10P, 0.5mm)
6) The viewfinder block is need not be connected. To remove it, disconnect the following connector.
   VC-276 board CN7001 (20P, 0.5mm)
7) The lens block (CD-357 board) need not be connected. To remove, disconnect the following connectors.
   1. VC-276 board CN1501 (16P, 0.5mm)
   2. VC-276 board CN1551 (24P, 0.5mm)
8) By setting the "Forced VTR Power ON mode" or "Forced Camera Power ON mode", the video section can be operate even if the cabinet (L) assembly (SS-1380 block) has been removed. When removing the cabinet (L) assembly, disconnect the following connector.
   1. VC-276 board CN1109 (12P 0.8mm)

Note2: Setting the "Forced VTR Power ON" mode (VTR mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button.

The above procedure will enable the VTR power to be turned on with the cabinet (L) assembly (SS-1380 block) removed.
After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

Note3: Setting the "Forced Camera Power ON" mode (Camera mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the cabinet (L) assembly (SS-1380 block) removed.
After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note4: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-276 board CN1108. Connect the measuring instruments via the CPC-13 jig (J-6082-443-A). The following table lists the pin numbers and signal names of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-3-1.

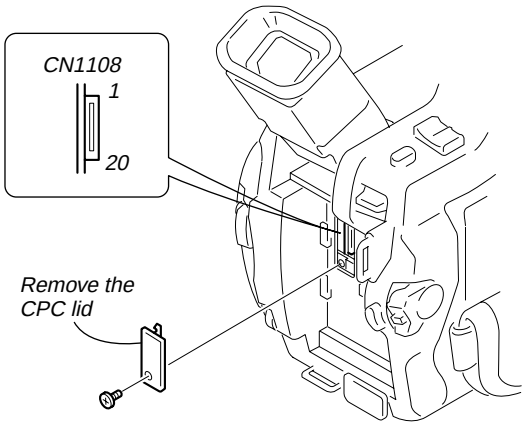


Fig. 5-3-1.

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2 and perform the adjustments.

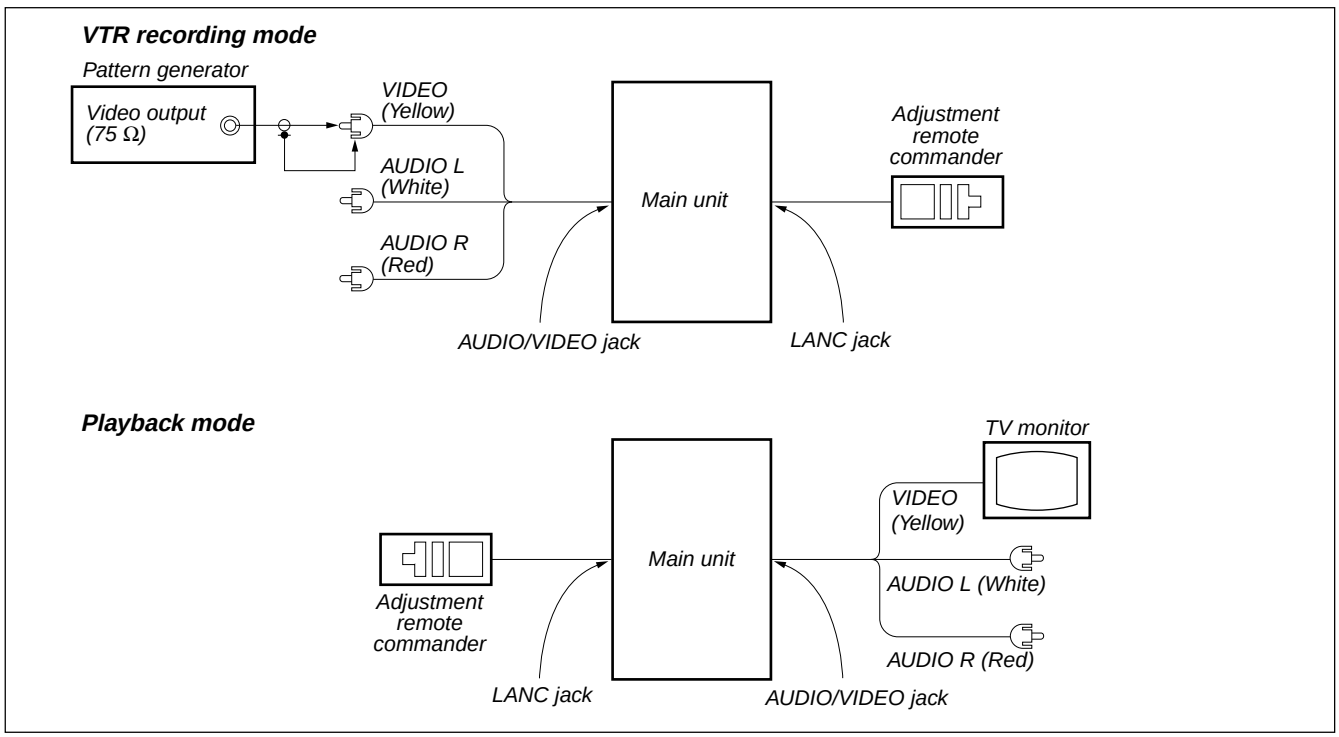


Fig. 5-3-2.

3-1-5. Alignment Tape

The following table lists alignment tapes which are available.
Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Digital8 alignment tape

Name	Usage
SW/OL standard (WR5-2D)	Switching position adjustment
Audio operation check (WR5-3ND),	Audio system adjustment
System operation check (WR5-5ND)	Operation check

Hi8/standard 8 alignment tape

Name	Record-ing mode	Tape type	Tape speed	Usage
Tracking WR5-1NP	Standard 8	MP	SP	Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	Hi8	ME	SP	Frequency characteristics adjustment
Operation check (SP mode) WR5-5NSP	Standard 8	MP	SP	Checking operations
Operation check (SP mode) WR5-8NSE	Hi8	ME	SP	
Operation check (LP mode) WR5-4NL	Standard 8	MP	LP	
Operation check (LP mode) WR5-8NLE	Hi8	ME	LP	
AFM stereo Operation check WR5-9NS	Standard 8	MP	SP	AFM stereo Checking operations
BPF adjustment WR5-11NS	Standard 8	MP	SP	BPF adjustment

Tape type
ME ..... Particle type metal tape
MP ..... Evaporated type metal tape

Fig.5-3-3. shows the 75% color bar signals recorded on the alignment tape.

Note: Measure using the VIDEO terminal (Terminated at 75Ω).

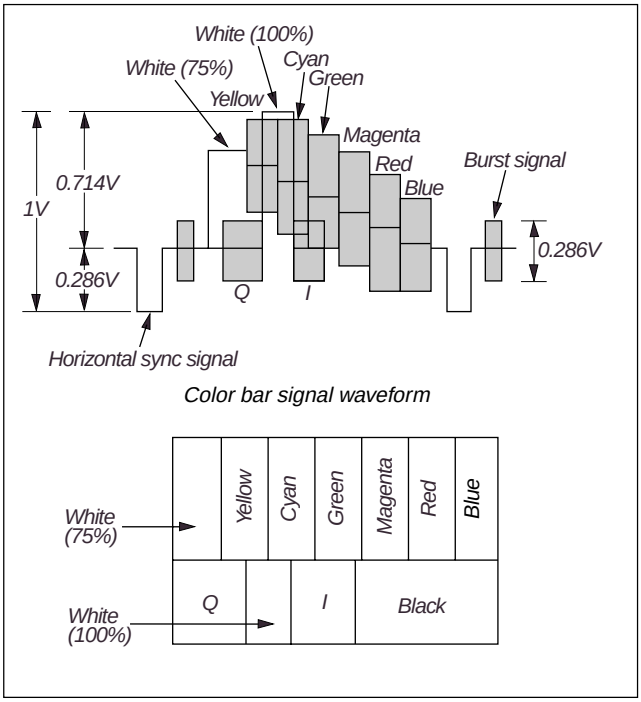


Fig. 5-3-3. Color Bar Signal of the Alignment Tape

3-1-6. Input/output Level and Impedance

Video input/output
Special stereo minijack, 1Vp-p, 75Ω, unbalanced, sync negative
S video input/output
4-pin mini DIN
Luminance signal: 1Vp-p, 75Ω, unbalanced, sync negative
Chrominance signal: 0.286Vp-p, 75Ω, unbalanced
Audio input/output
Special stereo minijack:
Input: –7.5dBs, input impedance more than 47kΩ
Output:–7.5dBs, (at load impedance 47kΩ), impedance less than 2.2kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1F Page Data

If the 8, A, B, C, D, E, F, 1B, 1C, 1F page data is erased due to some reason, perform "1-2. INITIALIZATION OF PAGE DATA" of "5-1. CAMERA SECTION ADJUSTMENT"

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B. 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: A page, B page and 1B page are DCR-TRV340 model only.

2. Serial No. Input

Note: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

2-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	8
Address	8C, 8D, 8E, 8F, 90

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: 8, addresses: 8C to 90.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data
8C	08
8D	00
8E	46
8F	01
90	02

2-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	8
Address	91, 92, 93

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   D_1=77881
   Note: Use six digits of the low rank when a serial No. is more than seven digits.
3) Obtain D_2 and H1 corresponding to D_1 from Table 5-3-2.
   Example: If D1 is "77881".
   $D_2=D_1-65536=12345$
   H_1=FE

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	D_1–65536	FE
131072 to 196607	D_1–131072	FE

Table 5-3-2.

4) Input H1 to page: 8, address: 91. (Model code input)
   Example: If H_1 is "FE".
   Select page: 8, address: 91, set data: FE, and press the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 5-3-3, and take this as D_3.
   Example: If D_2 is "12345".
   D_3 = 12288
6) Obtain the hexadecimal corresponding to D_3 from Table 5-3-3, and take this as H_3.
   Example: If D_3 is "12288".
   H_3 = 3000
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   $D_4 = D_2 - D_3$
   Examp le: If D_2 is "12345" and D_3 is "12288".
   $D_4 = 12345 - 12288 = 57$
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to "Hexadecimal-decimal conversion table" in "5-4. Service Mode".)
   Example: If D_4 is "57".
   H_4 = 39
9) Input the upper 2 digits of H_3 to page: 8, address: 92.
   Example: If H_3 is "3000".
   Select page: 8, address: 92, set data: 30, and press the PAUSE button.
10) Input H_4 to page: 8, address: 93.
    Example: If H_4 is "39".
    Select page: 8, address: 93, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 5-3-3.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of "27 MHz Origin Oscillation Adjustment" of "VIDEO SYSTEM ADJUSTMENT" is satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Adjusting Procedure:

1. REEL FG adjustment
2. PLL f_0 & LPF f_0 adjustment
3. Switching position adjustment
4. AGC center level and APC & AEQ adjustment
5. PLL f_0 & LPF f_0 fine adjustment
6. Hi8/Standrd8 switching position adjustment
7. Cap FG duty adjustment

1. REEL FG Adjustment (VC-276 board) RadarW

Compensates the dispersion of the hall elements.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	17, 2F
Specified Value	00 or 01 or 04 or 05

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1C	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to "00",
5	3	03		Check that the data is "00" or "01" or "04" or "05". (Note)
6	0	01	00	Set the data.

Note: If the data is other value, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
02, 03, 06, 07	T reel is defective
08, 09, 0C, 0D	S reel is defective
0A, 0B, 0E, 0F	S reel and T reel are defective

2. PLL f_0 & LPF f_0 Adjustment (VC-276 board) RadarW

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	21	CA	Set the data, and press PAUSE button.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	30	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to "00" with in 10 sec. (Note2)
6	3	03		Check that the data is "00". (Note2)
7	0	01	00	Set the data.

Note2: If it isn't satisfied, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 3 to 6.

	Setting data
When the data of page: C, address: 21 is "CA".	CE
When the data of page: C, address: 21 is "CE".	C6
When the data of page: C, address: 21 is "C6".	D2
When the data of page: C, address: 21 is "D2"	C2

There are errors when it isn't satisfied even if the above treatment is done.
If bit2, bit3, bit4, bit5 or bit 6 of the data of page: 3, address: 03 is "1", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit 2 = 1 or bit 3 = 1	PLL f_0 fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f_0 adjustment is defective
bit 6 = 1	LPF f_0 adjustment is defective

3. Switching Position Adjustment (VC-276 board) RadarW

To obtain normal playback waveform output during the Digital8 playback mode, adjust the switching position.

Mode	VTR playback
Signal	SW/OL reference tape (WR5-2D)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	C	10	EE	Set the data, and press PAUSE button.
4	3	21		Check that the data is "02". (Note2)
5	3	01	0D	Set the data, and press PAUSE button.
6	3	02		Check that the data changes to "00" in the following order. "0E"→"29"→"0E"→"20"→"00"
7	3	03		Check that the data is "00". (Note3)
8	C	10		Check that the data is other than "EE". (Note4)
9	0	01	00	Set the data.

Note2: If the data of page: 3, address: 21 is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.

Note3: If the data is other value, adjustment has errors. If bit 0 of the data is "1", the A channel is defective. If bit 1 is "1", the B channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".) If bit 3 of the data is "1",the tape end being played, and adjustment has errors.

Note4: If the data is "EE", rewind the tape and repeat steps 1 to 7.

When the A channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC4502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC3301

When the B channel is defective

Data of page: C, address: 12	Contents of defect
E8	Adjustment data is out of range
E7	No data is returned from IC3301

4. AGC Center Level and APC & AEQ Adjustment

Note: The data of page: 0, address: 10 must be "00".
Use a Hi8 MP tape.

4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	21	C8	Set the data.
3				Record the camera signal for three minutes.

4-2. AGC Center Level Adjustment (VC-276 board) RadarW

Mode	Playback
Signal	Recorded signal at "Preparations before adjustments"
Measurement Point	Pin ⑯ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The data of page: 3, address: 03 is "00"

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑳ (GND) of CN1108.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at "Preparations before adjustments"
2	0	01	01	Set the data.
3	<2> [7]	<4D> [62]	<40> [01]	Set the data. (Note2)
4	3	33	08	Set the data.
5				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
6	3	01	23	Set the data, and press PAUSE button.
7	3	02		Check that the data is "00".
8	3	03		Check that the data is "00". (Note3)
9				Perform "APC & AEQ Adjustment".

Note 2: < >: DCR-TRV240, [ ]: DCR-TRV340

Note 3: If the data of page: 3, address: 03 is other than "00", adjustment has errors.

4-3. APC & AEQ Adjustment (VC-276 board) RadarW

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑯ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	The data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑳ (GND) of CN1108.
75Ω resistor (Parts code: 1-247-804-11)
Note 2: The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	18	20	Set the data, and press PAUSE button.
3	C	19	20	Set the data, and press PAUSE button.
4	C	1B	25	Set the data, and press PAUSE button.
5	C	1C	25	Set the data, and press PAUSE button.
6	C	21	CA	Set the data, and press PAUSE button.
7	C	2C	03	Set the data, and press PAUSE button.
8				Playback the recorded signal at “Preparations before adjustments”
9	<2> [7]	<4D> [62]	<40> [01]	Set the data. (Note3)
10	3	33	08	Set the data.
11				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
12	3	01	07	Set the data, and press PAUSE button.
13	3	02		Check that the data changes from “07” to “00” in about 20 seconds after pressing PAUSE button.
14	3	03		Check that the data is “00”. (Note4)
15				Perform “Processing after Completing Adjustments”.

Note 3: < >: DCR-TRV240, [ ]: DCR-TRV340
Note 4: If the data is other than “00”, adjustment has errors.

4-4. Processing after Completing Adjustments RadarW

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<2> [7]	<4D> [62]	<00> [00]	Set the data. (Note)
3	3	33	00	Set the data.
4	8	21	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

Note: < >: DCR-TRV240, [ ]: DCR-TRV340

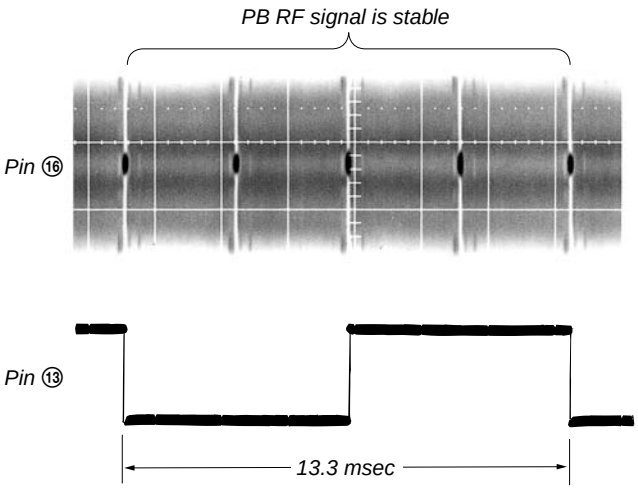


Fig. 5-3-4.

5. PLL f0 & LPF f0 Fine Adjustment (VC-276 board)

RadarW

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Display data of page: 3, address: 02 is "00". Display data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to "00" with in 10 sec. (Note2)
4	3	03		Check that the data is "00". (Note3)
5	0	01	00	Set the data.

Note2: If it isn't satisfied, there are errors.

Note3: If the data of page: 3, address: 03 is other than "00", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03	Error contents
bit 2 = 1 or bit 3 = 1	PLL f0 fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f0 adjustment is defective
bit 6 = 1	LPF f0 adjustment is defective

6. Hi8/Standard8 Switching Position Adjustment (VC-276 board)

If deviated in this case causes switching noise or jitter on the Hi8/Standard8 mode played back screen.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For tracking adjustment (WR5-1NP)
Measurement Point	CH1: Pin ⑧ of CN1108 (RF SWP) CH2: Pin ⑤ of CN1108 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	40, 41
Specified Value	t1 = 0 ± 10 μsec

Note1: The data of page: 0, address: 10 must be "00".

Adjusting Method:

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	C	3E	40	Set the data, and press PAUSE button.
4	<2> [7]	<4D> [62]	<80> [02]	Set the data. (Note2)
5				Set to the playback mode.
6	C	40		Change the data and minimize "t1". (Coarse adjustment)
7	C	40		Press PAUSE button
8	C	41		Change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
9	C	41		Press PAUSE button
10	C	3E	00	Set the data, and press PAUSE button.
11	<2> [7]	<4D> [62]	<00> [00]	Set the data. (Note2)
12	0	01	00	Set the data.

Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

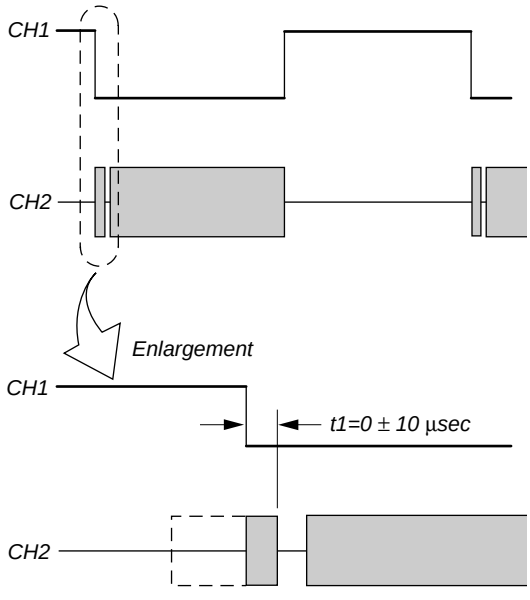


Fig. 5-3-5.

7. CAP FG Duty Adjustment (VC-276 board) RadarW

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur in the Hi8/Standard8 LP mode.

Mode	Playback
Signal	Hi8/standard 8 alignment tape : For checking operation (WR5-5NSP)
Measurement Point	Pin ⑮ of CN1108 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	16
Specified value	Duty = 50 ± 1 %

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Set to the playback mode.
2	0	01	01	Set the data.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	81	Set the data, and press PAUSE button.
5	3	02		Check that the data changes from "81" to "00".
6	3	03		Check that the data is "00". (Note2)
7				Check that Duty of CAP FG signal satisfies the specified value. If not, repeat steps 3 to 7.
8	0	01	00	Set the data.

Note2: If the data of page: 3, address: 03 is other than "00", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03	Error contents
bit 0 = 1	Adjustment time-out
bit 1 = 1	Hi8/Standard8 mode wasn't set up.

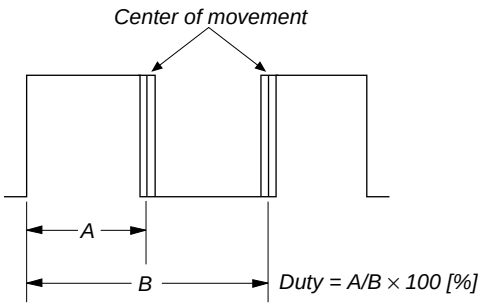


Fig. 5-3-6.

3-4. VIDEO SYSTEM ADJUSTMENTS

Note: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

1. 27MHz Origin Oscillation Adjustment (VC-276 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

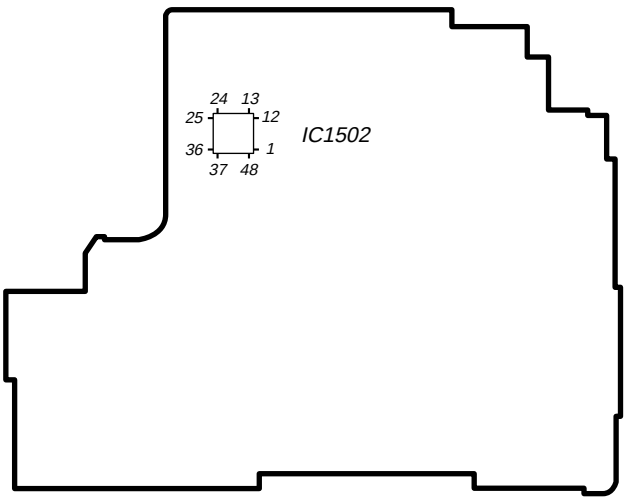
Mode	VTR stop
Signal	Not required
Measurement Point	Pin ⑯ of IC1502
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	12
Specified Value	f = 13500000 ± 68Hz

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	12		Change the data and set the frequency (f) to the specified value.
3	F	12		Press PAUSE button.
4	0	01	00	Set the data.

VC-276 board



2. S VIDEO OUT Y Level Adjustment (VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 20mV

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7	C	25		Change the data and set the Y signal level (A) to the specified value.
8	C	25		Press PAUSE button.
9	3	0C	00	Set the data, and press PAUSE button.
10	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
11	0	01	00	Set the data.
12				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

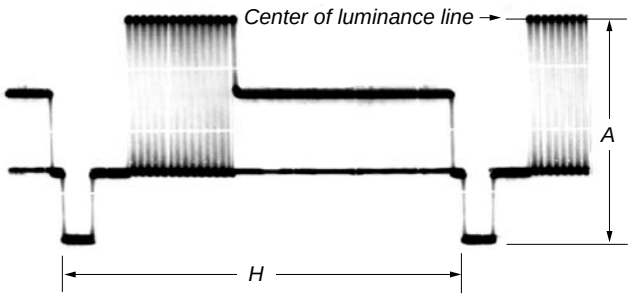


Fig. 5-3-7.

3. S VIDEO OUT Chroma Level Adjustment (VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV Cb level: B = 714 ± 14mV Burst level: C = 286 ± 6mV

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7	C	26		Change the data and set the Cr signal level (A) to the specified value.
8	C	26		Press PAUSE button.
9	C	27		Change the data and set the Cb signal level (B) to the specified value.
10	C	27		Press PAUSE button.
11	3	0C	00	Set the data, and press PAUSE button.
12	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
13	0	01	00	Set the data.
14				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

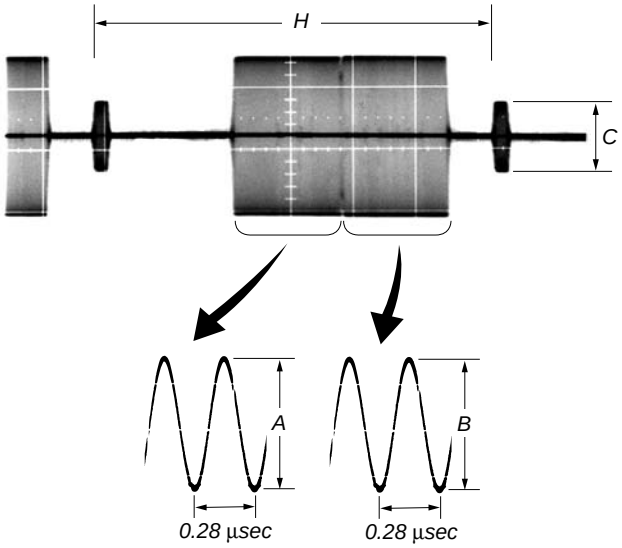


Fig. 5-3-8.

4. VIDEO OUT Y, Chroma Level Check (VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Video signal terminal of AUDIO/ VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 293 ± 18mV Burst level: B = 286 ± 18mV

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7				Check that the sync signal level (A) satisfies the specified value.
8				Check that the burst signal level (B) satisfies the specified value.
9	3	0C	00	Set the data, and press PAUSE button.
10	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
11	0	01	00	Set the data.
12				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, [ ]: DCR-TRV340

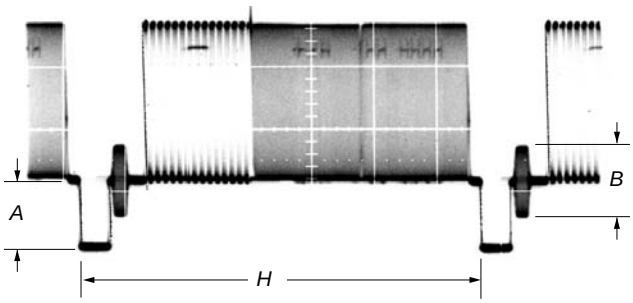


Fig. 5-3-9.

5. Hi8/Standard8 Y/C Output Level Setting (VC-276 board)

RadarW

Set the Y/C signal output level during the Hi8/Standard8 playback mode.

Mode	VTR stop
Signal	No signal
Adjustment Page	C
Adjustment Address	44, 45

Note1: Perform this adjustment when IC2201 is replaced.
Note2: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	9E	01	Set the data.
4	3	A4		Check that the data. When the data is “53”, proceed to step 5. When the data is “03”, proceed to step 8.
5	C	44	69	Set the data, and press PAUSE button.
6	C	45	64	Set the data, and press PAUSE button.
7				Proceed to step 10.
8	C	44	A0	Set the data, and press PAUSE button.
9	C	45	AA	Set the data, and press PAUSE button.
10	3	9E	00	Set the data.
11	D	10	00	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

6. Hi8/standard 8mm AFC fo Adjustment (VC-276 board)

RadarW

Adjust the pull-in range of the clock generator (IC2201) for A/D conversion during Hi8/standard 8mm playback.

Mode	VTR stop
Signal	No signal
Measurement Point	Display data of page: 3, address: 9D
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	43
Specified Value	7C to 84

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	0D	04	Set the data, and press PAUSE button.
4	3	93	04	Set the data.
5	3	9E	01	Set the data.
6	C	43	50	Set the data, and press PAUSE button.
7	3	01	60	Set the data, and press PAUSE button.
8	3	02		Check that the data changes from “60” to “00”.
9	3	03		Check that the data is “00”.
10	3	01	00	Set the data, and press PAUSE button.
11	3	9D		Check that the data satisfies the specifies value. When the data doesn’t satisfy the specified value, return to step 6.
12	3	0D	00	Set the data, and press PAUSE button.
13	3	93	00	Set the data.
14	3	9E	00	Set the data.
15	D	10	00	Set the data, and press PAUSE button.
16	0	01	00	Set the data.

3-5. AUDIO SYSTEM ADJUSTMENTS

Note: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

[Connecting the measuring instruments for the audio]
Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 5-3-10.

[Adjustment Procedure]
1) Hi8/Standard8 AFM BPF f_0 adjustment
2) Hi8/Standard8 AFM 1.5MHz deviation adjustment
3) Hi8/Standard8 AFM 1.7MHz deviation adjustment
4) Digital8 playback level check
5) Overall level characteristics check
6) Overall distortion check
7) Overall noise level check
8) Overall separation check

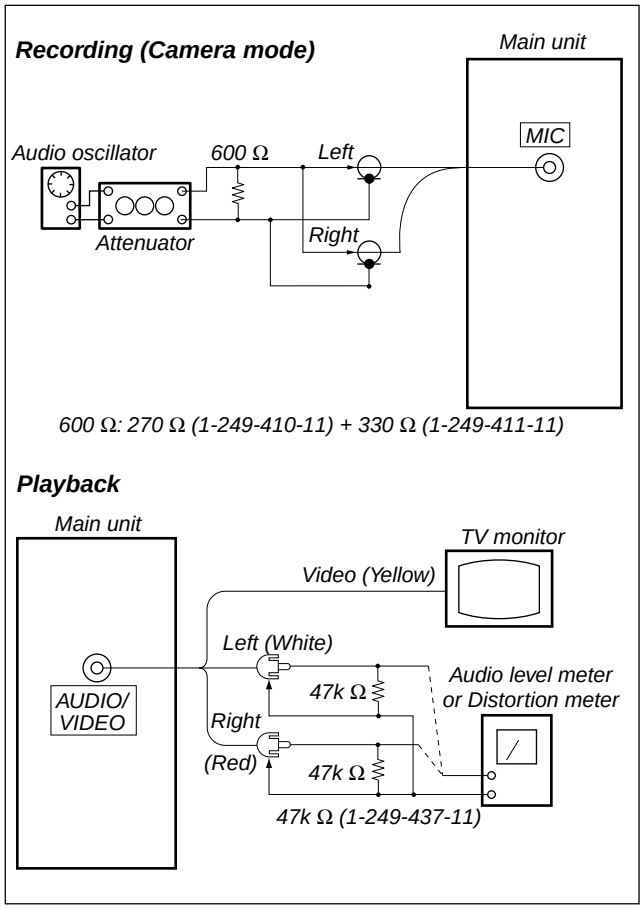


Fig. 5-3-10.

1. Hi8/Standard8 AFM BPF f_0 Adjustment (VC-276 board)

Sets the BPF passing frequency of IC5701 so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For BPF adjustment (WR5-11NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Distortion meter
Adjustment Page	C
Adjustment Address	4E
Specified Value	The Main and Sub channel distortion rate should be almost the same (within ± 1%) and minimum.

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:
1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to "2".
3) Select page: C, address: 4E, change the data and minimize the distortion rate.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to "1".
6) Select page: C, address: 4E, change the data and minimize the distortion rate.
7) Press the PAUSE button.
8) Repeat steps 2) to 7) and set the data of address: 4E so that the distortions rates when the Hi-Fi SOUND switch is set to "2" and set to "1" respectively are almost the same and minimum.
9) Press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.
11) Set the Hi-Fi SOUND switch to "STEREO".

2. Hi8/Standard8 AFM 1.5 MHz Deviation Adjustment (VC-276 board)

Adjust to the optimum 1.5MHz audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Adjustment Page	C
Adjustment Address	4C
Specified Value	–7.5 ± 2.0dBs

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to “1”.
3) Select page: C, address: 4C, change the data and set the 400Hz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

3. Hi8/Standard8 AFM 1.7 MHz Deviation Adjustment (VC-276 board)

Adjust to the optimum 1.7MHz audio FM signal deviation.
If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	4D
Specified Value	–7.5 ± 2.0dBs

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to “2”.
3) Select page: C, address: 4D, change the data and set the 1kHz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

4. Digital8 Playback Level Check

Mode	Playback
Signal	Digital8 alignment tape: For audio operation check (WR5-3ND)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

5. Overall Level Characteristics Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack left and right.
2) Record the signal.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

6. Overall Distortion Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack left and right.
2) Record the signal.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

7. Overall Noise Level Check

Mode	Recording and playback
Signal	No signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Connect the left terminal of MIC jack and its ground terminal with a jumper wire.
2) Connect the right terminal of MIC jack and its ground terminal with a jumper wire.
3) Record the signal.
4) Playback the recorded section.
5) Check that the noise level is the specified value.
6) Remove the jumper wires.

8. Overall Separation Check

Mode	Recording and playback
Signal	No signal: MIC jack <left> [right] 400Hz, –66dBs signal: MIC jack <right> [left]
Measurement Point	AUDIO/VIDEO jack <left> [right]
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs

< >: Left channel check
[ ]: Right channel check

Checking Method:

1) Connect the <left> [right] terminal of MIC jack and its ground terminal with a jumper wire.
2) Input the 400Hz, -66dBs signal in the MIC jack <right> [left].
3) Record the signal.
4) Playback the recorded section.
5) Check that the signal level of the AUDIO/VIDEO jack <left> [right] is the specified value.
6) Remove the jumper wire.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

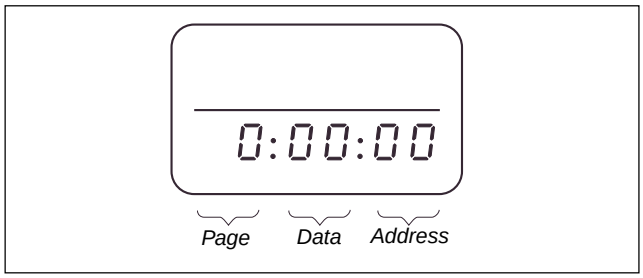


Fig. 5-4-1.

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 19 pages, from 0 to F, 1B, 1C, 1D (Note1).

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (8, A, B, C, D, E, F, 1B, 1C, 1D page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)(Note2)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B. 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: The A, B and 1B page are DCR-TRV340 model only.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

① \ Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

② (above the D (d) column)

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

4-3. SERVICE MODE

Additional note on adjustment

Note1: After the completion of the all adjustments, cancel the service mode by either of the following ways.
1) After data on page: C and D is restored, unplug the main power supply and remove the coin lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: C and D is restored, select page: 0, address: 01, and return the data to 00. And when data on page: 2, 3 and 7 are changed, return data to the original condition.

Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. Setting the Test Mode

Page C	Address 3E

Data	Function
00	Normal
01	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page C and D, the data set will be recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4Vdc).
- After completing adjustments/repairs, be sure to return the data of page: C address: 3E to 00, and the data of page: D address: 10 to 00, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

Page C	Address F4 to FF

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data "00" is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB).
Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

Note : After completing adjustments, be sure to initialize the data of addresses F4 to FF to "00".

Initializing method:
1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 37, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

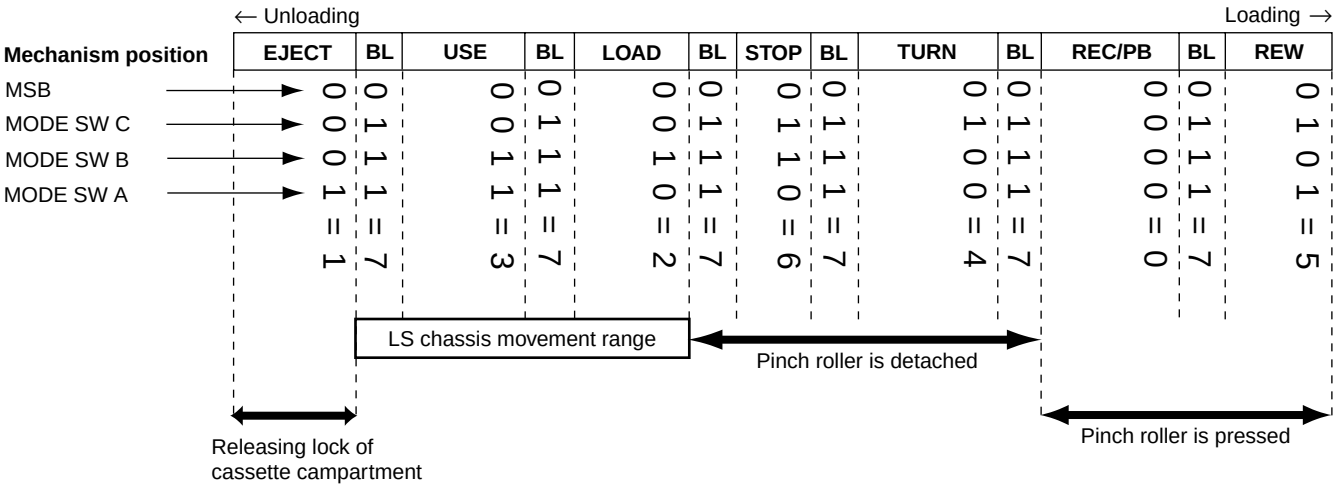
2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in C page, addresses F4, F8 and FC. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-2. MSW Code

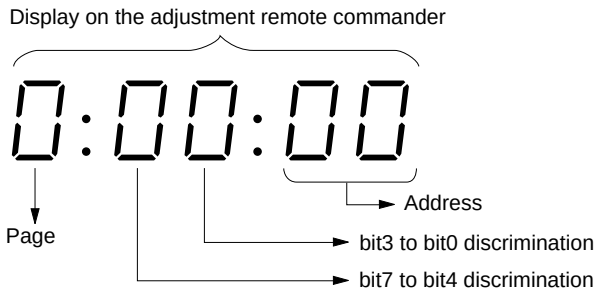
- The lower parts of the data of C page, addresses F6, FA and FE represent the MSW codes (mode switch mechanism position) when errors occurs.
- The upper parts of the data of C page, addresses F6, FA and FE represent, when the mechanism position is to be moved, the MSW codes at the start movement (when moving the loading motor).
- The lower parts of the data of C page, addresses F7, FB and FF represent the MSW codes of the desired movement when the mechanism position is to be moved.



Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
REC/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position. The mechanism will not move any further in the loading direction.

3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Us the table below to discriminate if the bit value is “1” or “0”.



(Example) If the remote commander display is “8E”, bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (C)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

4. Switch check (1)

• DCR-TRV240

Page 2	Address 42

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block S001)	OFF	ON (VCR/PLAYER)
1	POWER SW (CAM MODE SW) (SS-1380 block S001)	OFF	ON (CAMERA)
2	START/STOP SW (SS-1380 block S002)	OFF	ON
3	EJECT SW (SS-1380 block S003)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (SS-1380 block S004)	OFF	ON
6	POWER SW (PHOTO STBY SW) (SS-1380 block S001)	OFF	ON (MEMORY)
7			

Using method:

1) Select page: 2, address: 42.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

• DCR-TRV340

Page 7	Address 0E

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block S001)	ON (VCR/PLAYER)	OFF
1	POWER SW (CAM MODE SW) (SS-1380 block S001)	ON (CAMERA)	OFF
2	START/STOP SW (SS-1380 block S002)	ON	OFF
3	EJECT SW (SS-1380 block S003)	ON	OFF
4	CC DOWN SW (Mechanism chassis)	ON (DOWN)	OFF (UP)
5	PHOTO FREEZE SW (SS-1380 block S004)	ON	OFF
6	POWER SW (PHOTO STBY SW) (SS-1380 block S001)	ON (MEMORY)	OFF
7			

Using method:

1) Select page: 7, address: 0E.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

5. Switch check (2)

• DCR-TRV240

Page 2	Address 81

Bit	Function	When bit value = 1	When bit value = 0
4	AUDIO/VIDEO jack (FP-410 flexible J201)	Used	Not used
5	S VIDEO jack (FP-410 flexible J201)	Not used	Used
6	MIC jack (FP-411 flexible J302)	Used	Not used

Using method:

1) Select page: 2, address: 81.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

• DCR-TRV340

Page 7	Address 0C

Bit	Function	When bit value = 1	When bit value = 0
1	AUDIO/VIDEO jack (FP-410 flexible J201)	Used	Not used
2	S VIDEO jack (FP-410 flexible J201)	Used	Not used
3	MIC jack (FP-411 flexible J302)	Used	Not used

Using method:

1) Select page: 7, address: 0C.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (3)

Page 3	Address 61

Bit	Function	When bit value = 1	When bit value = 0
6	HEADPHONS jack (FP-411 flexible J301)	Used	Not used

Using method:

1) Select page: 3, address: 61.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

7. Switch check (4)

Page 2	Address 5C to 61	(DCR-TRV240)
Page 2	Address 60 to 65	(DCR-TRV340)

Using method:

1) Select page: 2, address: 5C to 61 (TRV240) or 60 to 65 (TRV340).
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
5C/60 (KEY AD0) (IC4801 ⑫⑥) (IC5001 ⑤⑨) *1	SUPER NIGHT SHOT (FK-2500) (S401)	STOP (FK-2500) (S404)	FF (FK-2500) (S407)	REW (FK-2500) (S409)	PLAY (FK-2500) (S403)	REC (FK-2500) (S406,408)		No key input
5D/61 (KEY AD1) (IC4801 ⑫⑦) (IC5001 ⑥⓪) *1	PAUSE (FK-2500) (S405)	FOCUS (CF-2500) (S004)	BACK LIGHT (CF-2500) (S016)	FADER (CF-2500) (S010)	EXPOSURE (CF-2500) (S027)	MENU EXECUTE (CF-2500) (S007)	PANEL CLOSE (CF-2500) (S001)	PANEL OPEN (CF-2500) (S001)
5E/62 (KEY AD2) (IC4801 ⑫⑧) (IC5001 ⑥①) *1		EDIT SEARCH + (CF-2500) (S024)	EDIT SEARCH – (CF-2500) (S025)					No key input
5F/63 (KEY AD3) (IC4801 ⑫⑨) (IC5001 ⑥⑤) *1	END SEARCH (CF-2500) (S003)	PB ZOOM (CF-2500) (S006)	TITLE (CF-2500) (S009)	MENU (CF-2500) (S012)	VOLUME + (CF-2500) (S015)	VOLUME – (CF-2500) (S022)	DISPLAY (CF-2500) (S019)	No key input
60/64 (KEY AD4) (IC4801 ⑬⓪) (IC5001 ⑥⑥) *1	MEMORY INDEX (CF-2500) (S026) *2	MPEG PLAY (CF-2500) (S005)	MEMORY MIX (CF-2500) (S029) *2	MEMORY DELETE (CF-2500) (S028) *2	MEMORY + (CF-2500) (S013) *2	MEMORY – (CF-2500) (S017) *2	MEMORY PLAY (CF-2500) (S018)*2	No key input
61/65 (KEY AD5) (IC4801 ⑬①) (IC5001 ⑥⑦) *1		PHOTO (PHOTO START) (SS-1380) (S004)	PANEL REVERSE (FP-412) (S601)					PANEL NORMAL (FP-412) (S601)

*1: IC4801 (DCR-TRV240), IC5001 (DCR-TRV340)
*2: DCR-TRV340

8. Record of Use check (1)

Page 2	Address A5 to AA	(DCR-TRV240)
Page 7	Address C8 to CD	(DCR-TRV340)

Address	Function		Remarks
<A5>[C8]	User initial power	Year	After setting the clock, set the date of power on next
<A6>[C9]	on date	Month	
<A7>[CA]	(BCD code)	Day	
<A8>[CB]	Final condensation	Year	
<A9>[CC]	occurrence date	Month	
<AA>[CD]	(BCD code)	Day	

< > : DCR-TRV240, [ ] : DCR-TRV340

Using method:

1) The record of use data is displayed at addresses: <A5 to AA>[C8 to CD].
   Note: Only for DCR-TRV240 model, this data will be erased (reset) when the CF-2500 board (VC-276 board CN1110 (22P)) is removed.

Initializing method for DCR-TRV240:

1) Using the adjustment remote commander, select address A5 to AA and set data: 00.

Initializing method for DCR-TRV340:

1) Select page: 7, address: 00, set data: 30, and press PAUSE button.
2) Select page: 7, address: 01, set data: 30, and press PAUSE button.
3) Select page: 7, address: 02, and check the data is “01”.

9. Record of Use check (2)

Note: When replacing the drum assembly, initialize the data.

Page D	Address D0 to D1	(DCR-TRV240)

Address	Function		Remarks
D0	Drum rotation counted time	Hour (L)	100th place digit and 10th place digit (decimal digit)
D1	(BCD code)	Hour (H)	10000th place digit and 1000th place digit (decimal digit)

Using method:

1) The record of use data is displayed at addresses: D0, D1.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address D0 to D7 and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

Page 7	Address A7 to A9	(DCR-TRV340)

Address	Function		Remarks
A7	Drum rotation counted time	Hour (H)	100000th place digit and 10000th place digit (decimal digit)
A8	(BCD code)	Hour (M)	1000th place digit and 100th place digit (decimal digit)
A9		Hour (L)	10th place digit and 1st place digit (decimal digit)

Using method:

1) The record of use data is displayed at addresses: A7 to A9.

Initializing method:

1) Select page: 7, address: 00, set data: 71, and press PAUSE button.
2) Select page: 7, address: 01, set data: 71, and press PAUSE button.
3) Select page: 7, address: 02, and check the data is “01”.

10. Record of Self-diagnosis check

Page 2	Address B0 to C6	(DCR-TRV240)
Page 7	Address B0 to C6	(DCR-TRV340)

Address	Self-diagnosis code
B0	“Repaired by” code (Occurred 1st time) *1
B1	“Block function” code (Occurred 1st time)
B2	“Detailed” code (Occurred 1st time)
B4	“Repaired by” code (Occurred 2nd time) *1
B5	“Block function” code (Occurred 2nd time)
B6	“Detailed” code (Occurred 2nd time)
B8	“Repaired by” code (Occurred 3rd time) *1
B9	“Block function” code (Occurred 3rd time)
BA	“Detailed” code (Occurred 3rd time)
BC	“Repaired by” code (Occurred 4th time) *1
BD	“Block function” code (Occurred 4th time)
BE	“Detailed” code (Occurred 4th time)
C0	“Repaired by” code (Occurred 5th time) *1
C1	“Block function” code (Occurred 5th time)
C2	“Detailed” code (Occurred 5th time)
C4	“Repaired by” code (Occurred the last time) *1
C5	“Block function” code (Occurred the last time)
C6	“Detailed” code (Occurred the last time)

*1 : “01” → “C”, “03” → “E”

Using method:

1) The past self-diagnosis codes are displayed at addresses: BC to C6. Refer to “SELF-DIAGNOSIS FUNCTION” for detail of the self-diagnosis code.
   Note: Only for DCR-TRV240 model, this data will be erased (reset) when the CF-2500 board (VC-276 board CN1110 (22P)) is removed.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

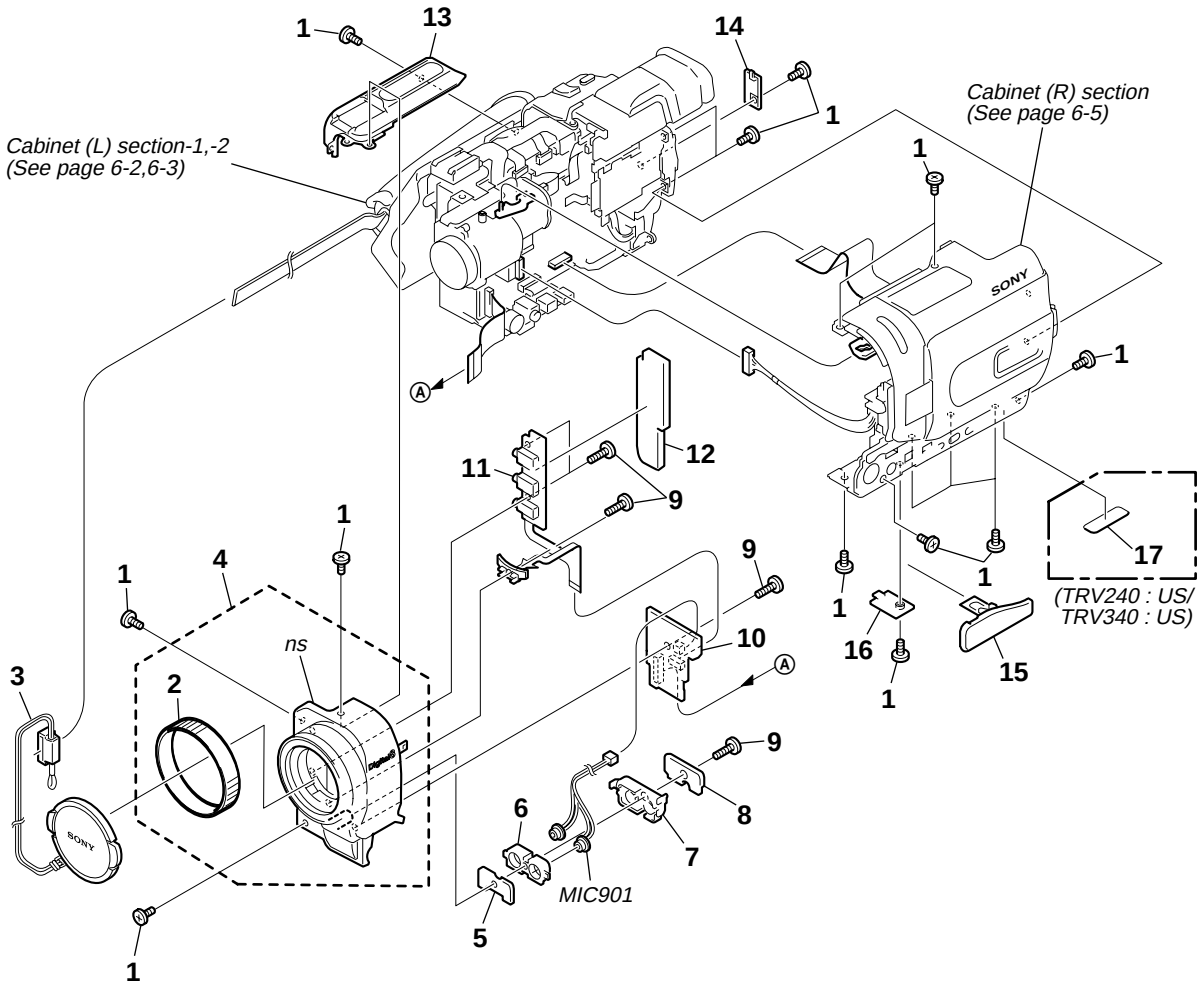
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  AR : Argentina model
  BR : Brazilian model

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

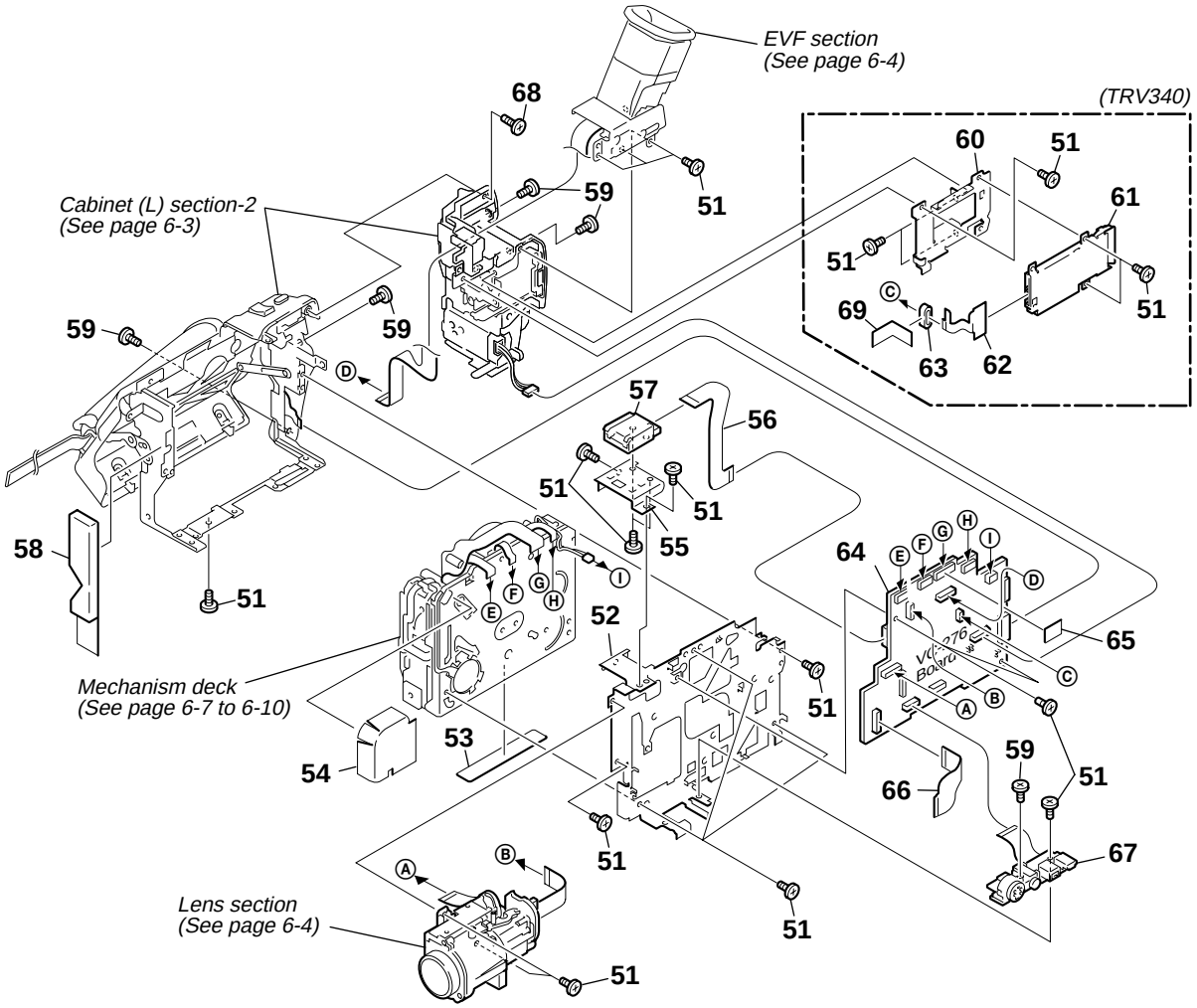
6-1-1. OVERALL SECTION

ns : not supplied



Ref. No.	Part No.	Description	Remarks
1	3-067-347-01	MI SCREW M2 (H)	
2	3-065-310-01	RING, RUBBER	
3	X-3949-376-1	CAP (N) ASSY, LENS	
4	X-3952-131-1	PANEL ASSY (24), FRONT	
5	3-072-279-01	CUSHION (F), MICROPHONE	
6	3-072-278-01	HOLDER, MICROPHONE	
7	3-072-277-01	RETAINER, MICROPHONE	
8	3-072-307-01	SHEET, MICROPHONE	
9	3-065-567-01	TAPPING (M1.7)	
10	A-7078-047-A	SI-032 BOARD, COMPLETE	
11	1-683-627-21	FP-411 FLEXIBLE BOARD	
12	3-072-309-01	CUSHION (1), F	
13	3-065-326-01	CABINET (UPPER)	
14	3-072-271-01	LID (BT), CPC	
15	3-072-343-01	COVER, JACK	
16	3-072-344-01	RETAINER, JACK COVER	
* 17	3-704-367-01	LABEL (TRV240:US/TRV340:US)	
MIC901	1-542-477-11	MICROPHONE	

6-1-2. CABINET (L) SECTION-1

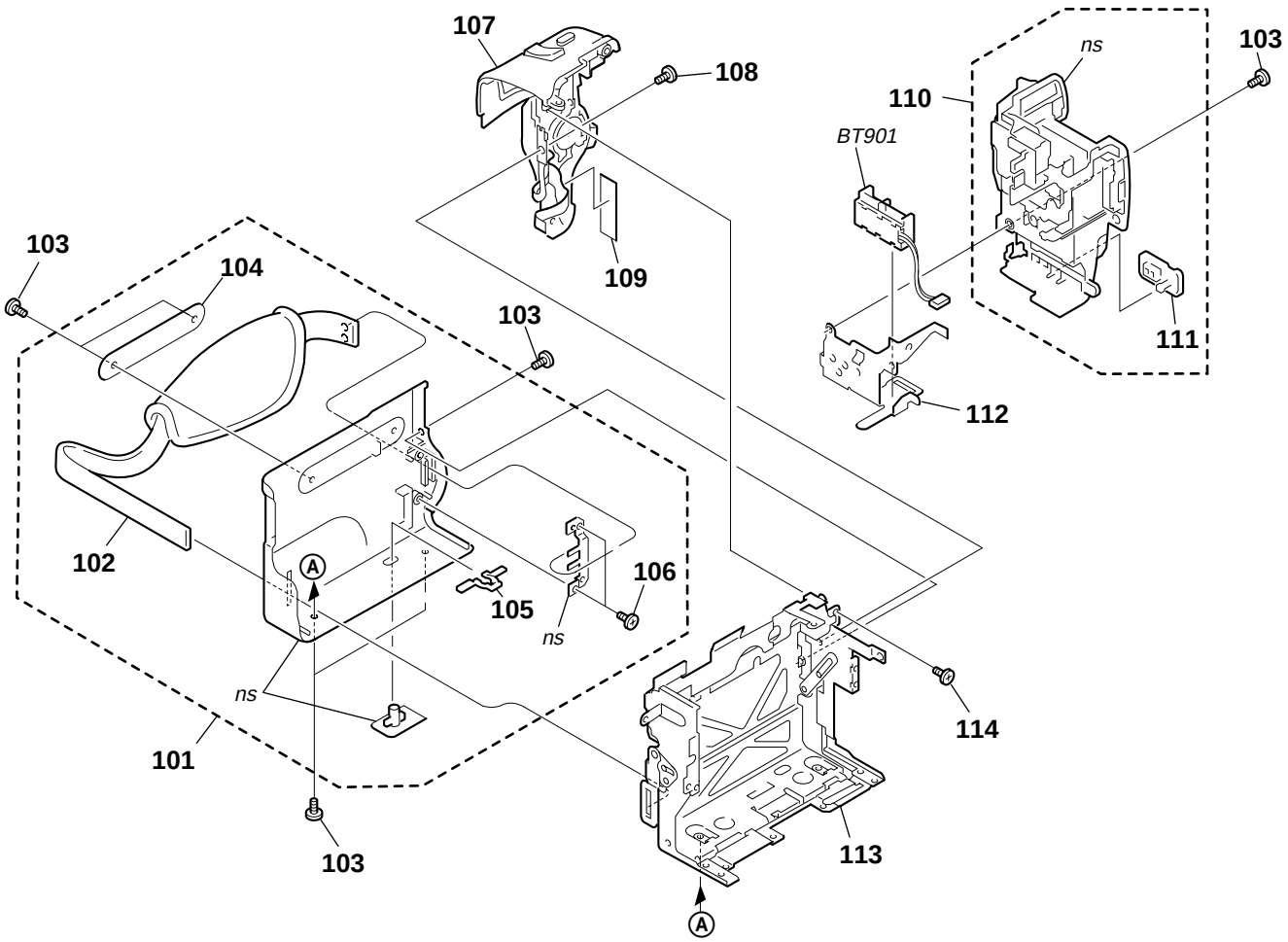


Ref. No.	Part No.	Description	Remarks
51	4-974-725-01	SCREW (M1.7X2.5), P	
52	3-072-267-01	FRAME, MD	
53	3-065-662-01	LABEL, LS CAUTION	
54	3-066-169-01	SHEET, MD	
55	3-072-268-01	FRAME, SHOE	
56	1-680-118-11	FP-264 FLEXIBLE BOARD	
57	1-815-124-11	CONNECTOR, EXTERNAL (HOT SHOE)(TRV340)	
57	1-815-124-21	CONNECTOR, EXTERNAL (HOT SHOE)(TRV240)	
58	3-072-308-01	COVER, MD	
59	3-067-347-01	MI SCREW M2 (H)	
60	3-072-273-01	HOLDER, MS (TRV340)	

Ref. No.	Part No.	Description	Remarks
61	1-816-271-11	CONNECTOR, MEMORY STICK 10P (TRV340)	
62	1-683-625-11	FP-409 FLEXIBLE BOARD (TRV340)	
63	1-500-226-11	BEAD, FERRITE (TRV340)	
64	A-7028-802-A	VC-276 (NS) BOARD, COMPLETE (SERVICE) (TRV240)	
64	A-7028-804-A	VC-276 (NFS) BOARD, COMPLETE (SERVICE) (TRV340)	
65	3-066-759-01	SHEET, VC	
66	1-683-623-11	FP-406 FLEXIBLE BOARD	
67	1-683-626-21	FP-410 FLEXIBLE BOARD	
68	3-065-567-01	TAPPING (M1.7)	
69	3-941-343-21	TAPE (A) (TRV340)	

6-1-3. CABINET (L) SECTION-2

ns : not supplied

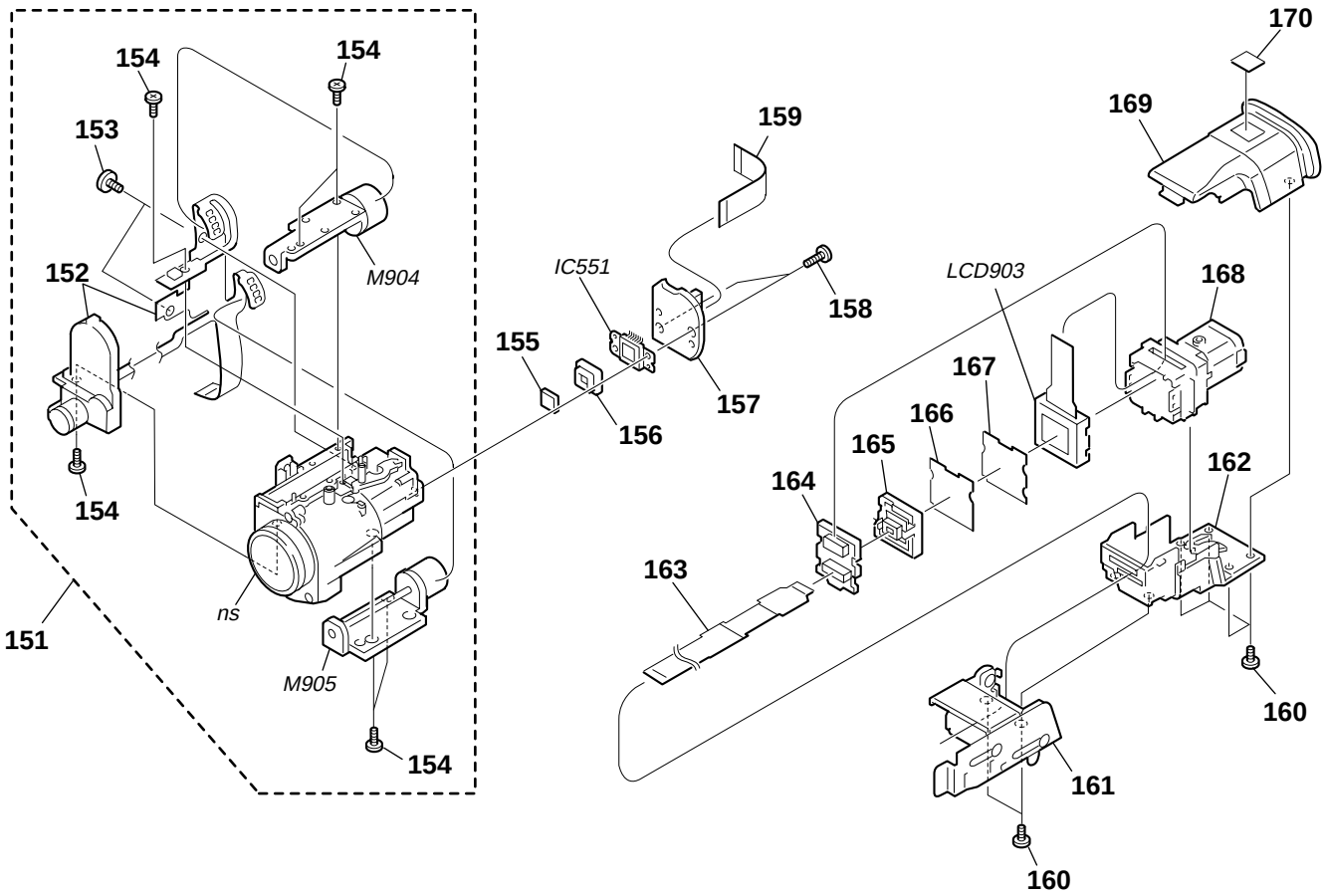


Ref. No.	Part No.	Description	Remarks
101	X-3951-159-1	CABINET (L) ASSY	
102	3-052-815-01	BELT (ES), GRIP	
103	3-067-347-01	MI SCREW M2 (H)	
104	3-065-308-01	LABEL (L)	
105	3-978-765-01	SLIDER, G LOCK	
106	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
107	1-476-415-11	SWITCH BLOCK, CONTROL (SS-1380)(TRV340)	
107	1-476-415-21	SWITCH BLOCK, CONTROL (SS-1380)(TRV240)	
108	4-974-725-01	SCREW (M1.7X2.5), P	
109	3-941-343-21	TAPE (A)	

Ref. No.	Part No.	Description	Remarks
110	X-3952-148-1	PANEL ASSY (MS), BATTERY (TRV340:US,CND,E,HK,KR,JE,AR)	
110	X-3952-149-1	PANEL ASSY, BATTERY (TRV240)	
110	X-3952-276-1	PANEL ASSY (MS), BATTERY (TRV340:BR)	
111	3-072-305-01	LID (2500), JACK	
112	3-072-274-01	SHEET METAL (LOWER), STRAP	
113	X-3952-136-1	FRAME ASSY (25), CS	
114	3-065-567-01	TAPPING (M1.7)	
BT901	1-694-772-11	TERMINAL BOARD, BATTERY	

6-1-4. LENS, EVF SECTION

ns : not supplied

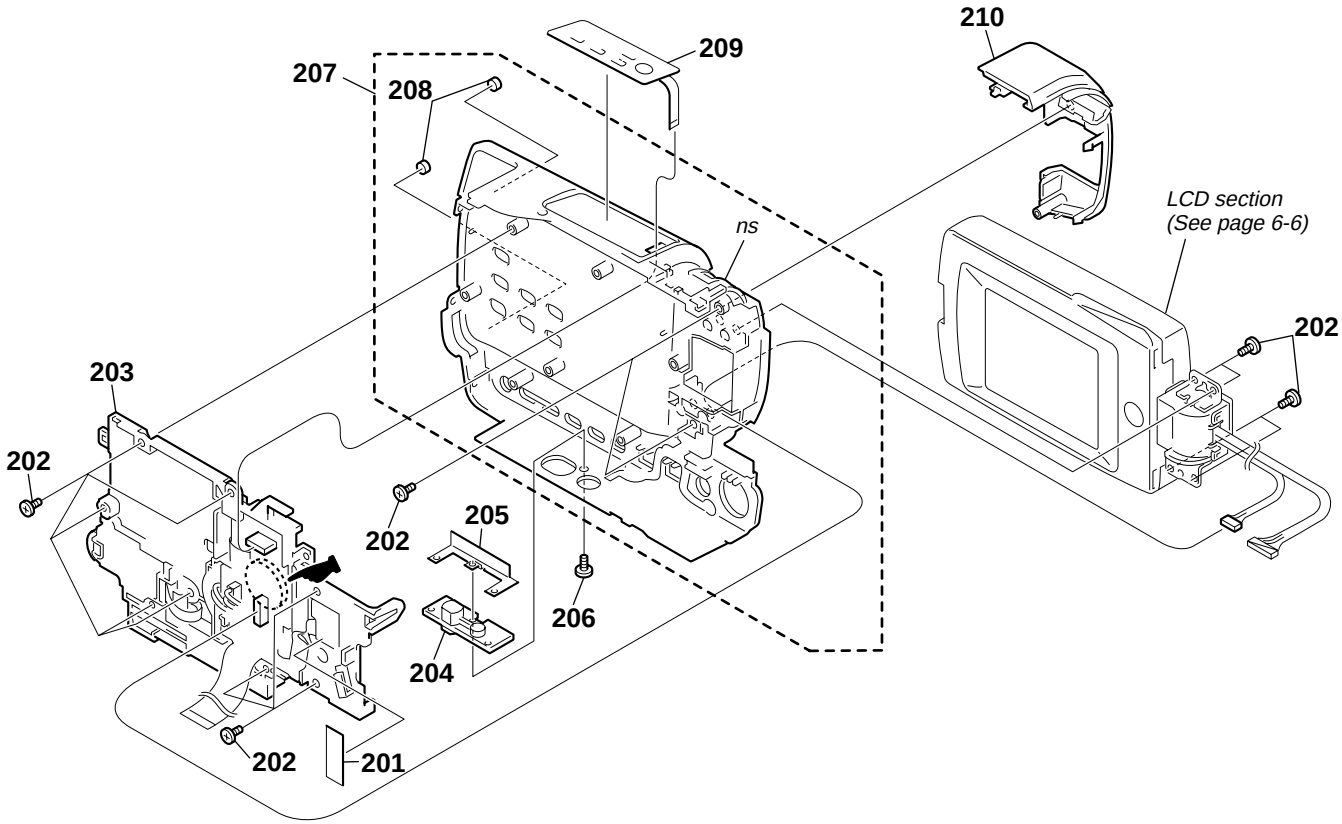


Be sure to read “Precautions upon replacing CCD imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
151	8-848-740-01	DEVICE, LENS LSV-700A	
152	X-3951-248-1	IRIS FLEXIBLE, ASSY	
153	3-065-022-01	TAPPING (B1.7X3.5), HEAD	
154	3-713-791-41	SCREW, TAPPING (M1.7X5), P2	
155	1-758-554-11	FILTER BLOCK, OPTICAL	
156	3-053-973-01	RUBBER (W), SEAL	
157	A-7078-046-A	CD-357 BOARD, COMPLETE	
158	3-318-203-11	SCREW (B1.7X6), TAPPING	
159	1-676-822-11	FP-161 FLEXIBLE BOARD	
160	3-065-567-01	TAPPING (M1.7)	
161	X-3951-165-1	HINGE ASSY, VF	
162	X-3952-134-1	CABINET (LOWER) ASSY, EVF	
163	1-683-624-11	FP-407 FLEXIBLE BOARD	
164	A-7078-049-A	LB-076 BOARD, COMPLETE	
165	3-065-058-01	GUIDE, LAMP	
166	3-072-211-01	ILLUMINATOR	
167	3-072-210-01	SHEET, PRISM	
168	X-3952-214-1	LENS (B) ASSY, VF	
169	X-3952-132-1	CABINET (UPPER) ASSY, EVF	
* 170	3-065-376-01	LABEL (138), B	
IC551	A-7028-780-A	CCD BLOCK ASSY (CCD IMAGER)	
LCD903	8-753-028-49	LCX032AP-5	
M904	1-763-634-11	MOTOR STEPPING Z700 (ZOOM)	
M905	1-763-635-11	MOTOR,STEPPING F700 (FOCUS)	

6-1-5. CABINET (R) SECTION

ns : not supplied



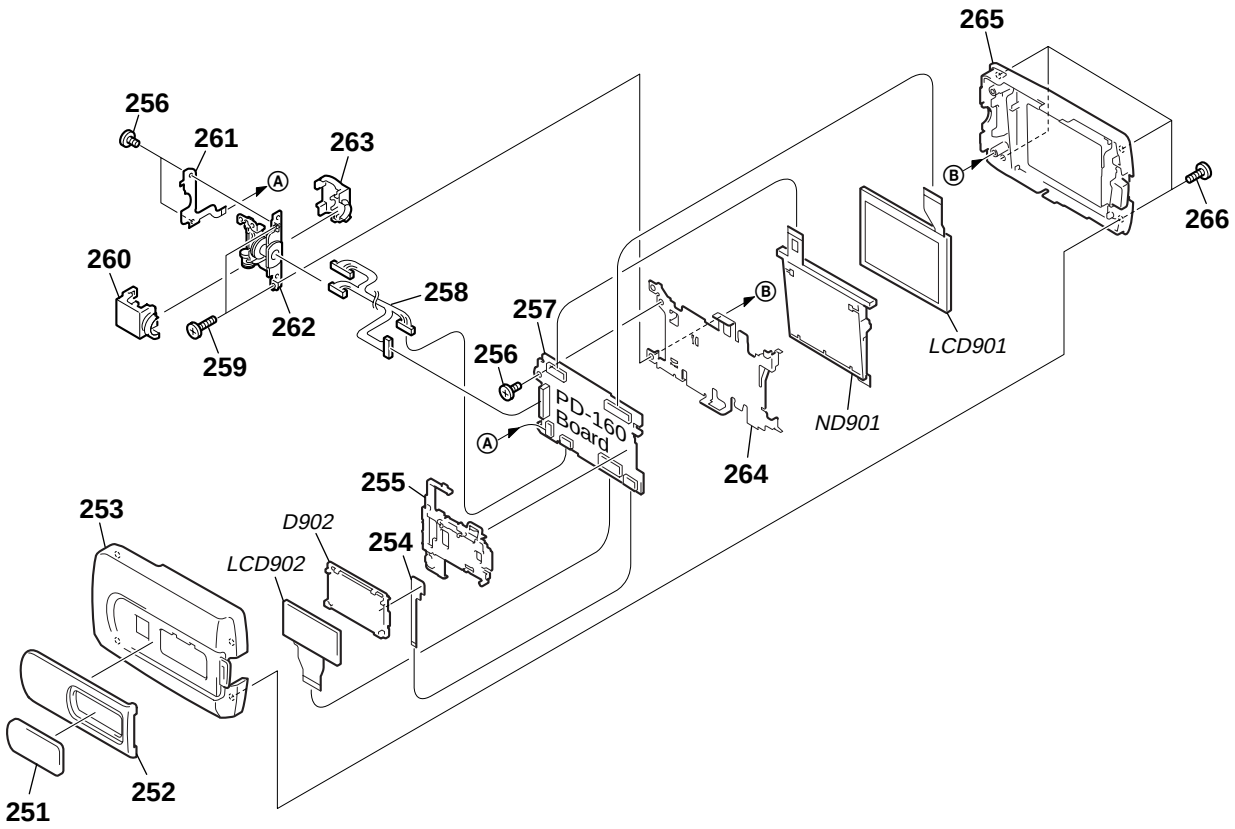
: The printed wiring board of the Control switch block (CF-2500) on which BT001 (lithium battery) is mounted, is not shown.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Ref. No.	Part No.	Description	Remarks
201	3-941-343-21	TAPE (A)	
202	3-948-339-61	TAPPING	
203	1-477-085-11	SWITCH BLOCK, CONTROL (CF-2500)(TRV240)	
203	1-477-085-21	SWITCH BLOCK, CONTROL (CF-2500)(TRV340)	
204	3-065-373-01	SCREW (Y), TRIPOD	
205	3-072-455-01	RETAINER, TRIPOD	
206	3-067-347-01	MI SCREW M2 (H)	

Ref. No.	Part No.	Description	Remarks
207	X-3952-129-1	CABINET R (2) ASSY (TRV340)	
207	X-3952-135-1	CABINET R (2) ASSY (TRV240)	
208	3-959-978-02	CUSHION, PANEL	
209	1-477-084-31	SWITCH BLOCK, CONTROL (FK-2500)	
210	X-3952-133-1	RING (2) ASSY, ORNAMENTAL (TRV340)	
210	X-3952-137-1	RING (2) ASSY, ORNAMENTAL (TRV240)	

6-1-6. LCD SECTION



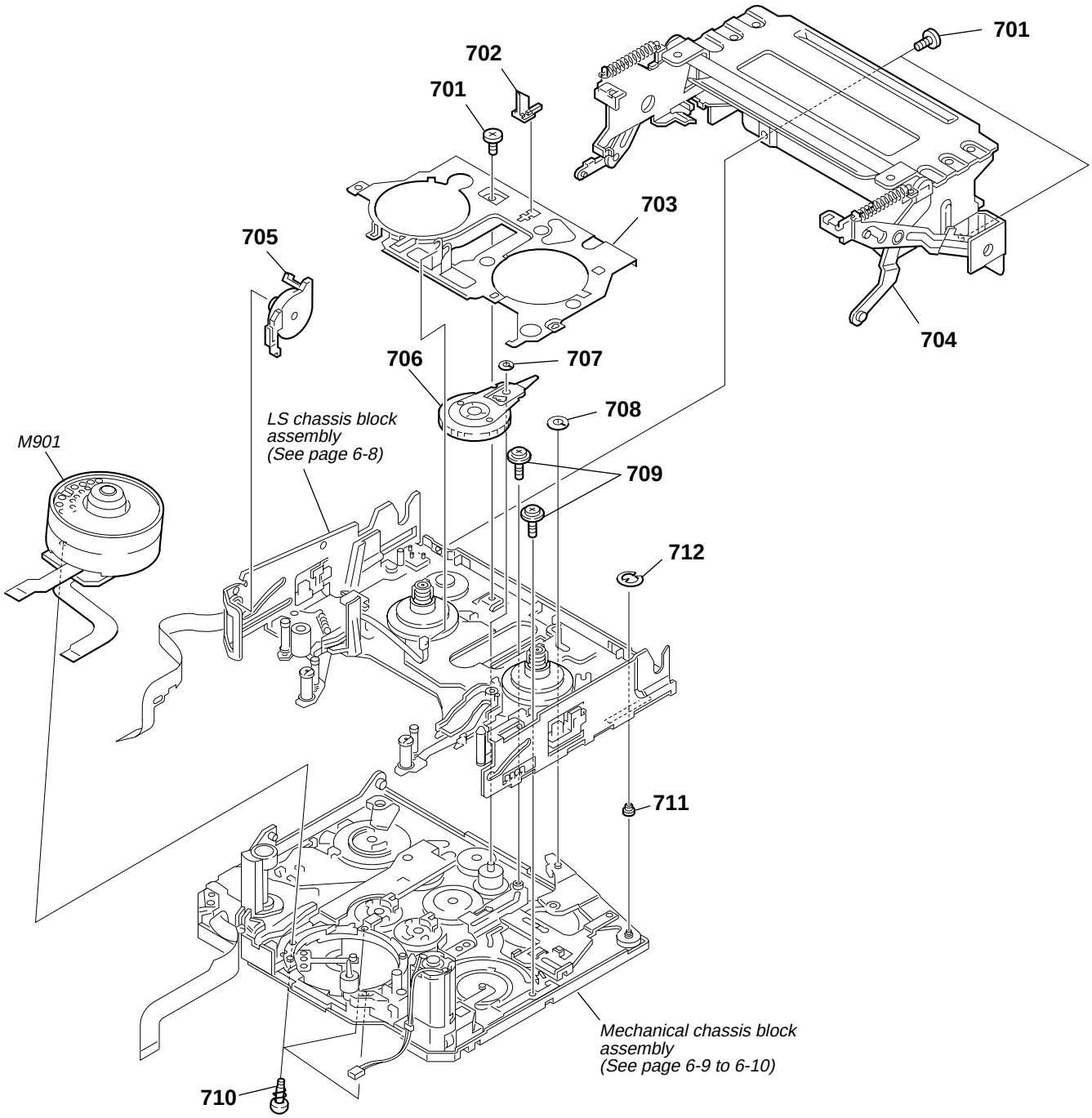
Ref. No.	Part No.	Description	Remarks
251	3-072-272-01	WINDOW, LCD	
252	X-3952-189-1	COVER (2) ASSY, CPC (TRV340)	
252	X-3952-192-1	COVER (2) ASSY, CPC (TRV240)	
253	3-072-341-01	CABINET (C (2)), P	
254	1-683-629-11	FP-414 FLEXIBLE BOARD	
255	3-072-286-01	HOLDER, LCD	
256	4-974-725-01	SCREW (M1.7X2.5), P	
257	A-7078-052-A	PD-160 (X6) BOARD, COMPLETE	
258	1-961-556-11	HARNESS (PD-117)	
259	3-318-203-11	SCREW (B1.7X6), TAPPING	
260	3-072-288-01	COVER (C), HINGE	

Ref. No.	Part No.	Description	Remarks
261	1-683-628-22	FP-412 FLEXIBLE BOARD	
262	X-3952-147-1	HINGE ASSY	
263	3-072-287-01	COVER (M), HINGE	
264	3-072-403-01	FRAME (2), P	
265	X-3952-150-1	CABINET (M) (2) ASSY, P	
266	3-065-567-01	TAPPING (M1.7)	
⚠D902	1-518-721-11	LIGHT, BACK	
LCD901	8-753-050-65	ACX308AK-1	
LCD902	A-7028-811-A	INDICATION LCD BLOCK ASSY	
⚠ND901	1-518-796-11	TUBE, FLUORESCENT,COLD CATHODE	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

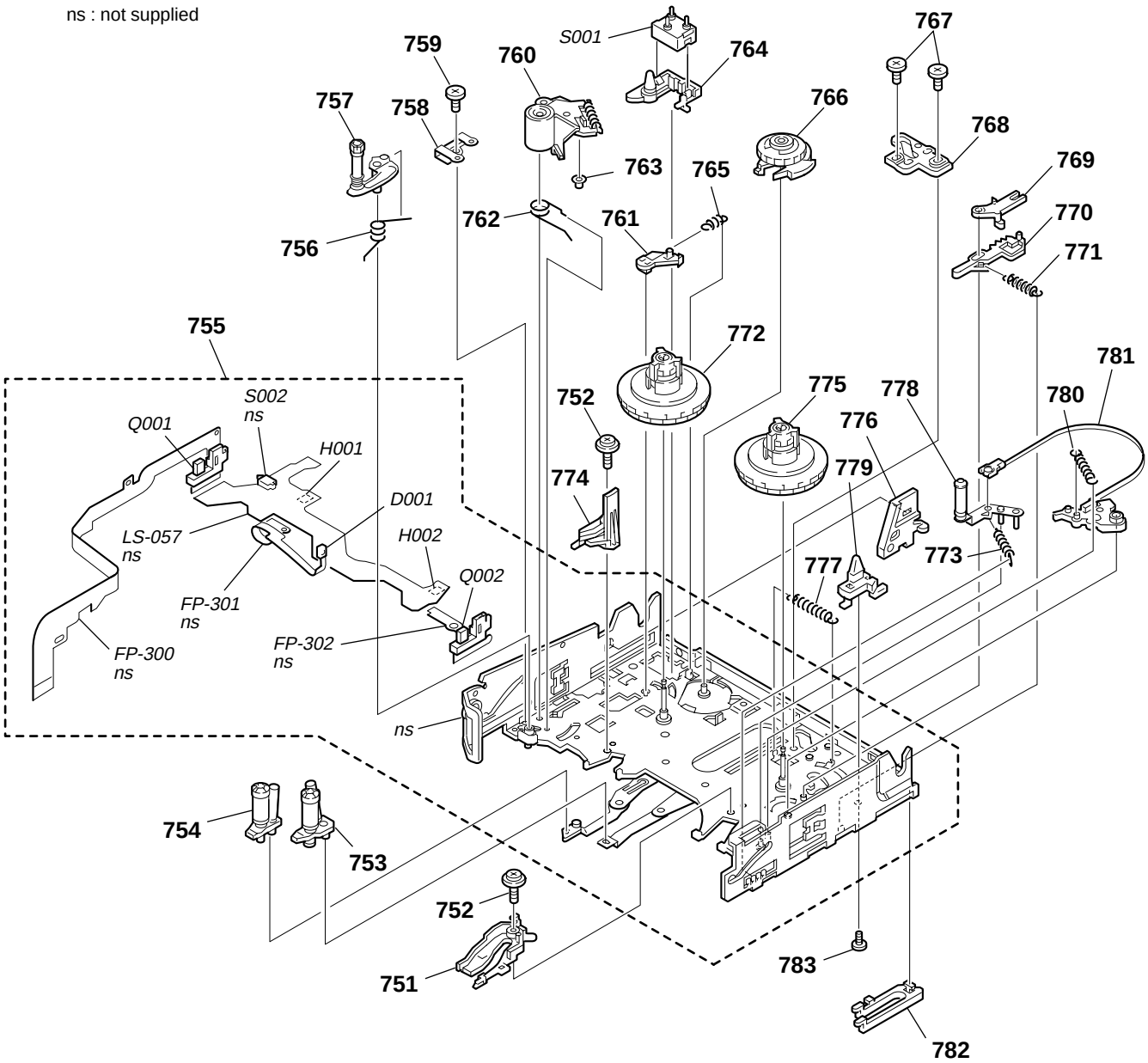
6-1-7. CASSETTE COMPARTMENT ASSY, DRUM ASSY



Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
702	3-065-895-01	LEVER, REEL RELEASE	
703	3-065-896-01	PLATE, BLIND	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	
705	X-3951-302-1	DAMPER ASSY	
706	X-3951-297-1	GEAR ASSY, R DRIVE	
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	
708	3-065-935-01	HLC CUT 1.8X4X0.5	
709	3-947-503-01	SCREW (M1.4)	
710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
711	3-074-309-01	ROLLER A, LS GUIDE	
712	7-624-101-04	STOP RING 1.2 (E TYPE)	
M901	A-7048-951-A	DRUM (DKH-04A-R) (SERVICE)	

6-1-8. LS CHASSIS BLOCK ASSEMBLY

ns : not supplied

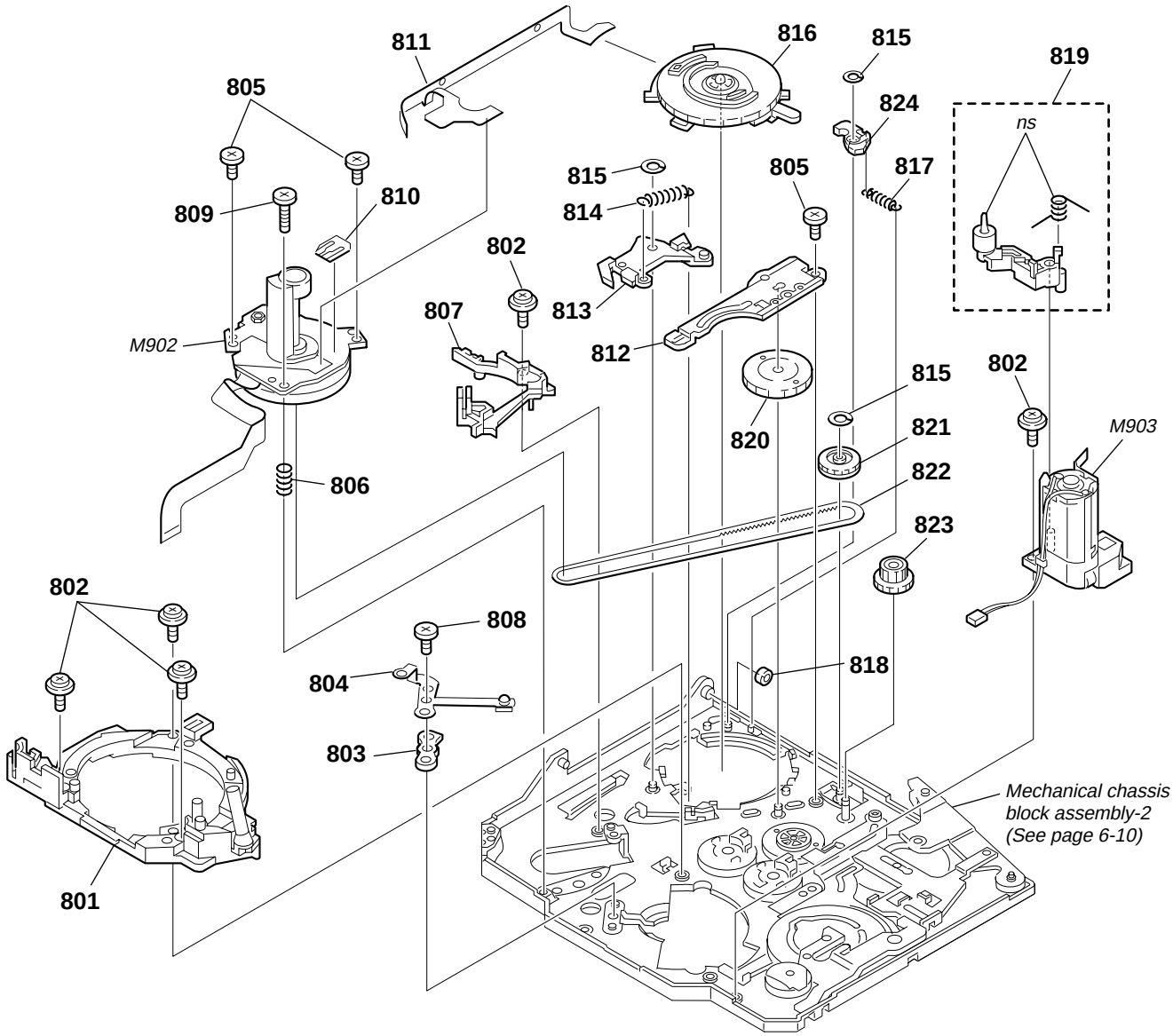


Ref. No.	Part No.	Description	Remarks
751	3-065-822-02	RAIL (S), GUIDE	
752	3-947-503-01	SCREW (M1.4)	
753	A-7096-416-B	BASE (S) BLOCK ASSY, GUIDE	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS	
756	3-065-802-01	SPRING, TG7 ARM	
757	A-7096-414-A	ARM BLOCK ASSY, TG7	
758	3-065-801-01	RETAINER, TG7	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
760	X-3951-303-1	ARM ASSY, PINCH	
761	3-065-823-01	ARM, T RATCHET	
762	3-065-794-01	ROAD (SPR), PINCH ARM	
763	3-065-792-01	ROLLER, P LIM ARM	
764	3-065-834-01	GUIDE (T), CASSETTE	
765	3-065-824-01	SPRING, T RATCHET	
766	A-7096-417-A	SOFT ASSY, T	
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8TYPE3	
768	3-065-832-01	PLATE, LS CAM	
769	3-065-828-01	ARM, S RATCHET	
770	3-065-829-01	PLATE, S RATCHET (RE)	

Ref. No.	Part No.	Description	Remarks
771	3-065-830-01	SPRING, S RATCHET	
772	X-3951-288-1	TABLE (T) ASSY, REEL	
773	3-065-819-01	SPRING, TG1 ARM	
774	3-065-821-01	RAIL (T), GUIDE	
775	X-3951-289-1	TABLE (S) ASSY, REEL	
776	3-065-833-01	GUIDE, LOCK	
777	3-065-831-01	PLATE (SPR), RE RETURN	
778	X-3951-304-1	ARM ASSY, TG1	
779	3-065-835-01	GUIDE (S), CASSETTE	
780	3-065-820-01	SPRING, RVS ARM	
781	X-3951-296-1	BAND (ASSY), BT	
782	3-065-836-01	COVER, LS GREASE	
783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)	

6-1-9. MECHANICAL CHASSIS BLOCK ASSEMBLY-1

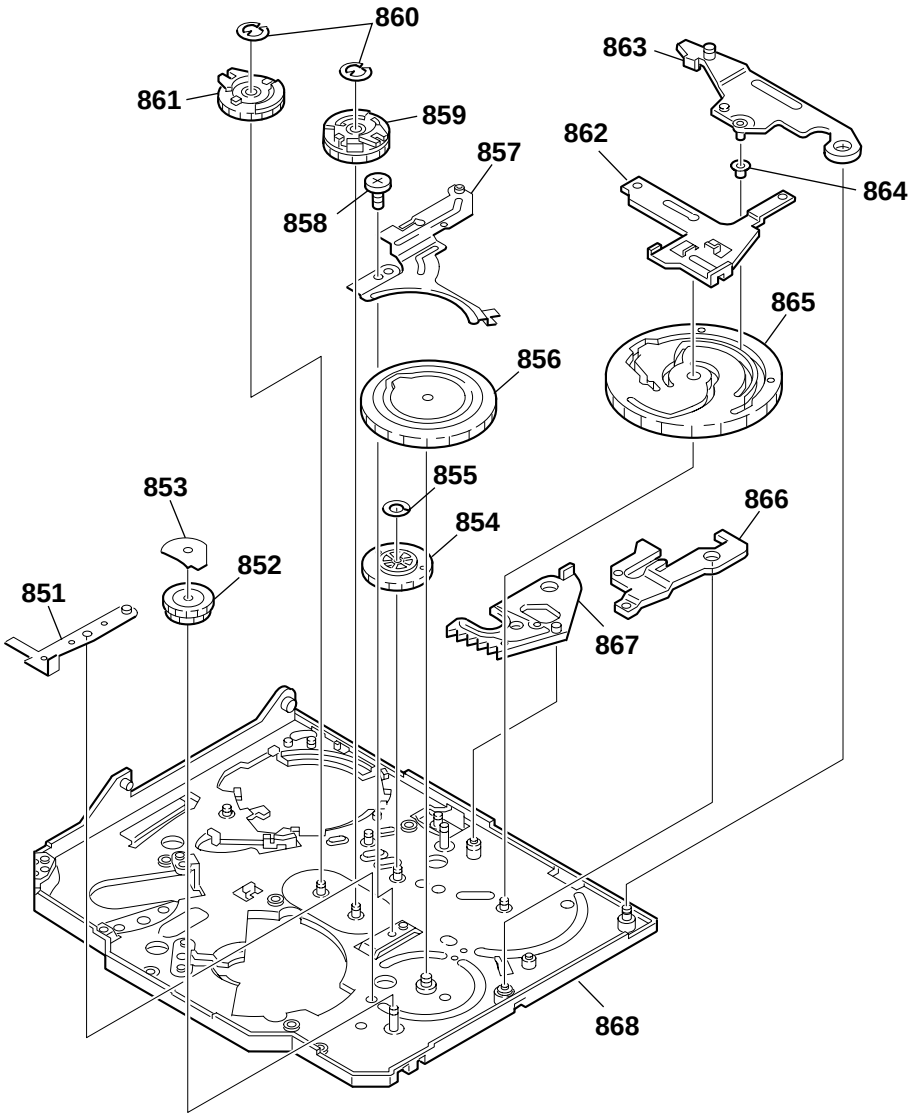
ns : not supplied



Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM	
802	3-947-503-01	SCREW (M1.4)	
803	3-065-928-01	SPACER, GROUND	
804	3-065-927-01	GROUND, DRUM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
806	3-067-154-01	SPRING, CAPSTAN	
807	3-065-931-01	RAIL (T2), GUIDE	
808	X-3947-398-1	SCREW ASSY, M1.7 PW	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)	
811	1-680-434-11	FP-299 FLEXIBLE BOARD	
812	3-065-877-01	PLATE (T), GUIDE LOCK	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	

Ref. No.	Part No.	Description	Remarks
814	3-065-881-01	SPRING, P PRESSURE PLATE	
815	3-065-934-01	HLW CUT 0.98X3X0.25	
816	1-786-096-11	SWITCH, ROTARY	
817	3-065-898-01	SPRING, EJECT ARM	
818	3-065-870-01	ROLLER, LS GUIDE	
819	A-7096-421-A	ARM ASSY, HCL	
820	3-065-918-01	GEAR (2), CAM RELAY	
821	A-7096-419-A	GEAR ASSY, CHANGE	
822	3-065-902-01	BELT, TIMING	
823	3-065-905-01	GEAR, RELAY	
824	3-065-882-01	ARM, EJECT	
M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-1-10. MECHANICAL CHASSIS BLOCK ASSEMBLY-2



Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE	
852	3-065-913-01	GEAR (4), LD	
853	3-065-914-01	SHEET, COVER	
854	3-065-917-01	GEAR (1), CAM RELAY	
855	3-065-934-01	HLW CUT 0.98X3X0.25	
856	3-065-915-01	GEAR (1), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	
860	7-624-101-04	STOP RING 1.2 (E TYPE)	
861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
862	X-3951-307-1	PLATE ASSY, M SLIDE	
863	X-3951-305-1	ARM ASSY, LS	
864	3-065-901-01	ROLLER, LS ARM	
865	3-065-916-01	GEAR (2), CAM	
866	3-065-919-01	ARM, T1 LIMITTER	
867	X-3951-308-1	ARM ASSY, GL	
868	X-3951-300-2	CHASSIS ASSY, MECHANICAL	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  AR : Argentina model
  BR : Brazilian model

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7078-046-A	CD-357 BOARD, COMPLETE			
		**********			
		(IC551 is not included in this complte board.)			
		< CAPACITOR >			
C552	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C556	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C560	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C561	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN551	1-779-332-11	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D551	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB552	1-414-445-11	FERRITE	0uH		
		< IC >			
IC551	A-7028-780-A	CCD BLOCK ASSY (CCD IMAGER)			
		< COIL >			
L552	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q551	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1		
		< RESISTOR >			
R551	1-218-940-11	RES-CHIP	82	5%	1/16W
R553	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R557	1-218-977-11	RES-CHIP	100K	5%	1/16W
R558	1-218-989-11	RES-CHIP	1M	5%	1/16W
R563	1-218-990-11	SHORT	0		
R564	1-218-990-11	SHORT	0		
R567	1-218-990-11	SHORT	0		
R568	1-218-990-11	SHORT	0		
R569	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
	A-7078-049-A	LB-076 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C702	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CONNECTOR >			
CN701	1-779-334-11	CONNECTOR, FFC/FPC 20P			
CN702	1-573-356-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D701	8-719-082-33	DIODE NSCW100-T38			
D702	8-719-074-30	DIODE SML-310LTT86			
		< IC >			
IC701	8-759-581-11	IC NJM2125F(TE2)			
		< TRANSISTOR >			
Q701	8-759-054-48	TRANSISTOR	UP04601008S0		
Q702	8-729-054-45	TRANSISTOR	UP04312008S0		
		< RESISTOR >			
R701	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R702	1-218-901-11	METAL CHIP	180K	0.5%	1/10W
R703	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R704	1-211-977-11	METAL CHIP	22	0.5%	1/10W
R706	1-216-839-11	METAL CHIP	33K	5%	1/16W
R707	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
	A-7078-052-A	PD-160 (X6) BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C5501	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C5504	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Be sure to read "Precautions upon replacing CCD imager" on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
C5509	1-110-457-11	ELECT CHIP	3.3uF	20%	25V
C5510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5511	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5515	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C5516	1-164-872-11	CERAMIC CHIP	82PF	5%	50V
C5517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5518	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5519	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5532	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5533	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5534	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5536	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5538	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5602	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5604	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C5605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5606	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
⚠C5607	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C5701	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN5501	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P			
* CN5502	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN5601	1-764-709-11	CONNECTOR, FFC/FPC 10P			
CN5701	1-794-998-31	PIN, CONNECTOR 20P			
CN5702	1-816-176-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN5703	1-816-178-11	CONNECTOR, FFC/FPC (ZIF) 20P			
CN5704	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P			
CN5705	1-766-759-11	CONNECTOR, FFC/FPC 4P			
		< DIODE >			
D5502	8-719-084-47	DIODE 1SV290(TPL3)			
D5503	8-719-050-42	DIODE RD3.3UM-T1B			
D5601	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB5502	1-414-760-21	FERRITE	0uH		
FB5504	1-414-760-21	FERRITE	0uH		
		< IC >			
IC5501	8-752-100-95	IC CXA3289AR-T4			
IC5502	8-752-407-33	IC CXD3512R-T4			
IC5601	8-759-564-49	IC TC7W53FU(TE12R)			
IC5602	8-759-075-70	IC TA75S393F-TE85R			
IC5701	8-759-573-02	IC BU9735K-E2			
		< COIL >			
L5501	1-469-527-91	INDUCTOR	47uH		
L5505	1-412-956-21	INDUCTOR	27uH		
L5601	1-419-387-21	INDUCTOR	100uH		
L5602	1-412-056-11	INDUCTOR	4.7uH		

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q5503	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5504	8-729-052-65	TRANSISTOR	2SA1774HT2L		
Q5505	8-729-041-23	TRANSISTOR	NDS356AP		
Q5506	8-729-052-64	TRANSISTOR	DTC144EHT2L		
Q5508	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5601	8-729-052-64	TRANSISTOR	DTC144EHT2L		
Q5602	6-550-083-01	TRANSISTOR	TPC6C01(TE85R)		
		< RESISTOR >			
R5501	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5503	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R5506	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R5507	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5508	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5509	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5510	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5511	1-218-989-11	RES-CHIP	1M	5%	1/16W
R5512	1-218-977-11	RES-CHIP	100K	5%	1/16W
R5522	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5551	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5572	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5573	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5574	1-208-957-11	RES-CHIP	820K	5%	1/16W
R5575	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5576	1-218-989-11	RES-CHIP	1M	5%	1/16W
R5577	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5579	1-218-979-11	RES-CHIP	150K	5%	1/16W
R5590	1-218-990-11	SHORT	0		
R5609	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5610	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5611	1-218-980-11	RES-CHIP	180K	5%	1/16W
R5612	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5614	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5617	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5618	1-218-949-11	RES-CHIP	470	5%	1/16W
R5704	1-218-987-11	RES-CHIP	680K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB5501	1-234-372-21	RES, NETWORK 100X4		(1005)	
		< TRANSFORMER >			
⚠T5601	1-435-227-11	TRANSFORMER, INVERTER			
	A-7078-047-A	SI-032 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C305	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C312	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C314	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C315	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN301	1-764-526-11	CONNECTOR, FFC/FPC 18P			
CN302	1-816-232-11	PIN, CONNECTOR (PC BOARD) 4P			
CN304	1-779-339-21	CONNECTOR, FFC/FPC 30P			
		< DIODE >			
D301	8-719-067-44	DIODE CL-310IRS-X-TU			
D302	8-719-067-44	DIODE CL-310IRS-X-TU			
D303	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D304	8-719-056-85	DIODE UDZSTE-178.2B			
D306	8-719-074-30	DIODE SML-310LTT86			
D309	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D313	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< FERRITE BEAD >			
FB301	1-414-760-21	FERRITE	0uH		
FB302	1-414-760-21	FERRITE	0uH		
		< IC >			
IC301	6-701-681-01	IC NJL61H400A			
		< TRANSISTOR >			
Q301	8-729-141-73	TRANSISTOR	2SD1938(F)-S(TX).SO		
		< RESISTOR >			
R301	1-216-810-11	METAL CHIP	120	5%	1/16W
R307	1-216-864-11	METAL CHIP	0	5%	1/16W
R316	1-216-817-11	METAL CHIP	470	5%	1/16W
R319	1-216-019-00	METAL CHIP	56	5%	1/10W
R320	1-216-019-00	METAL CHIP	56	5%	1/10W
		< SENSOR >			
SE301	1-803-042-31	SENSOR, ANGULAR VELOCITY (PITCH)			(SERVICE)
SE302	1-803-042-41	SENSOR, ANGULAR VELOCITY (YAW)			(SERVICE)
		< VARISTOR >			
VDR301	1-801-923-11	VARISTOR, CHIP			
VDR302	1-801-923-11	VARISTOR, CHIP			
VDR303	1-801-923-11	VARISTOR, CHIP			

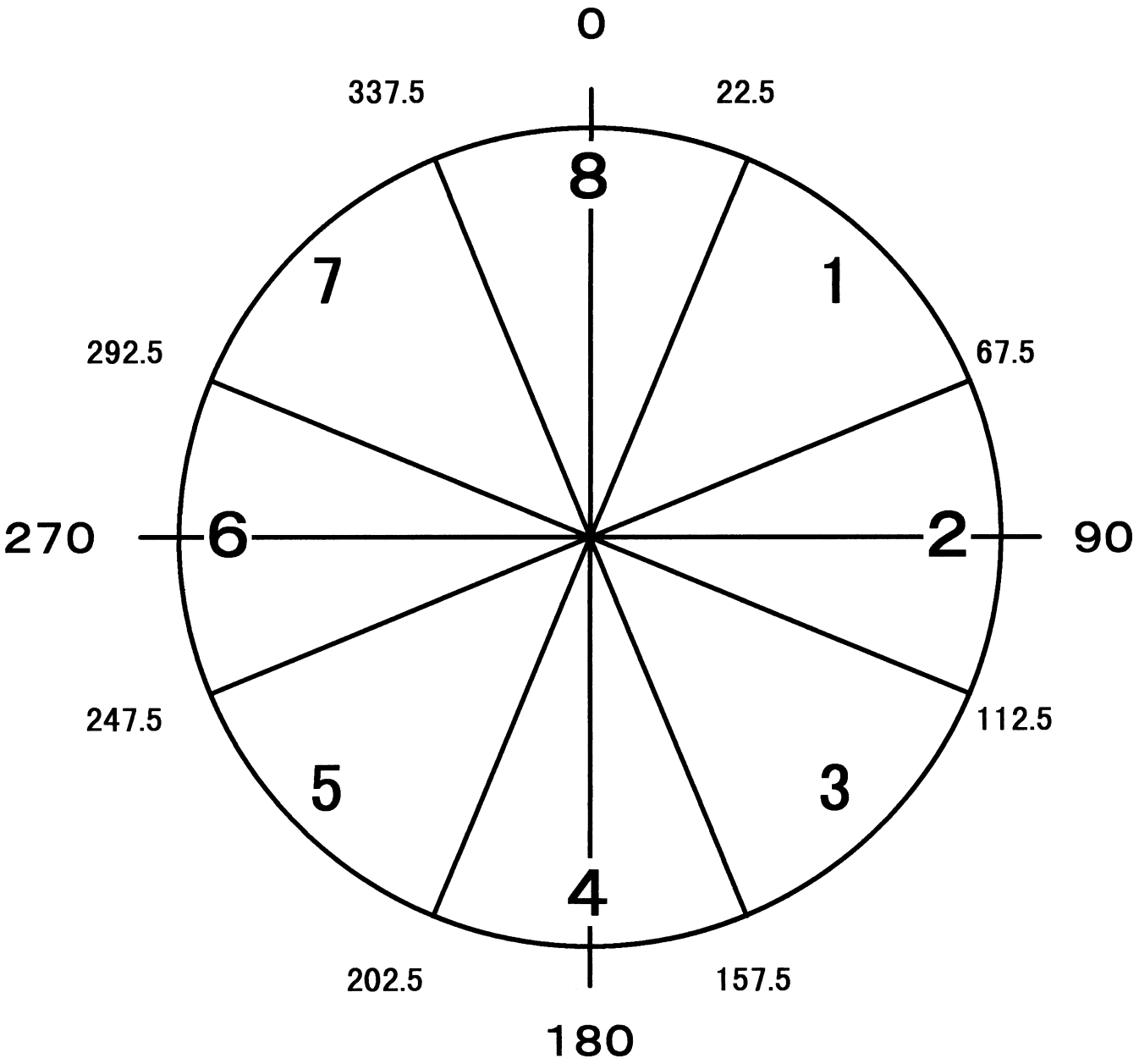
Ref. No.	Part No.	Description	Remarks
	A-7028-802-A	VC-276 (NS) BOARD, COMPLETE (SERVICE)	(TRV240)
		**********	
	A-7028-804-A	VC-276 (NFS) BOARD, COMPLETE (SERVICE)	(TRV340)
		**********	

Electrical parts list of the VC-276 board are not shown.
Pages 6-14 to 6-25 are not shown.

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES	
		**********	
	1-475-141-61	REMOTE COMMANDER (RMT-814) (TRV240/TRV340:US,CND,E,HK,JE,KR)	
⚠	1-475-599-11	ADAPTOR, AC (AC-L10A) (TRV240/TRV340:US,CND,E,HK,JE)	
⚠	1-475-599-71	ADAPTOR, AC (AC-L10A) (TRV340:KR)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (TRV340:JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (TRV240:E,HK/TRV340:E,HK)	
	1-757-293-21	CORD, CONNECTION (USB 5P) (TRV240/TRV340:US,CND,E,HK,JE)	
	1-765-080-11	CORD, CONNECTION(AV CABLE 1.5m) (TRV240/TRV340:US,CND,E,HK,JE)	
⚠	1-769-608-11	CORD, POWER (TRV240:E/TRV340:E)	
⚠	1-776-985-11	CORD, POWER (TRV340:KR)	
⚠	1-783-374-11	CORD, POWER (TRV240:HK/TRV340:HK)	
⚠	1-790-107-22	CORD, POWER (TRV240:US,CND/TRV340:US,CND)	
⚠	1-790-732-11	CORD, POWER (TRV340:JE)	
	3-072-414-01	SPVD-008 (CD-ROM USB DRIVER) (TRV240:E,HK/TRV340:E,JE,HK,KR)	
	3-072-455-01	RETAINER, TRIPOD (TRV240/TRV340:US,CND,E,HK,KR,JE)	
	3-072-650-11	MANUAL, INSTRUCTION (ENGLISH) (TRV240/TRV340:US,CND,E,JE,HK)	
	3-072-650-21	MANUAL, INSTRUCTION (FRENCH) (TRV240:CND/TRV340:CND)	
	3-072-650-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV240:E/TRV340:E,JE)	
	3-072-650-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TRV240:HK/TRV340:E,HK)	
	3-072-650-51	MANUAL, INSTRUCTION (ARABIC) (TRV340:E)	
	3-072-650-61	MANUAL, INSTRUCTION (KOREAN) (TRV340:JE,KR)	
	3-072-654-01	SPVD-008 (I)(CD-ROM USB DRIVER) (TRV240:US,CND/TRV340:US,CND)	
	3-742-854-01	LID, BATTERY CASE (FOR RMT-814)	
	3-987-015-01	BELT (S), SHOULDER (TRV240/TRV340:US,CND,E,HK,KR,JE)	
	A-7024-735-A	MEMORY STICK (TRV340:US,CND,E,HK,KR,JE)	
	X-3949-376-1	CAP (N) ASSY, LENS (TRV240/TRV340:US,CND,E,HK,KR,JE)	
		NP-FM30 BATTERY PACK (NOT SUPPLIED)	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

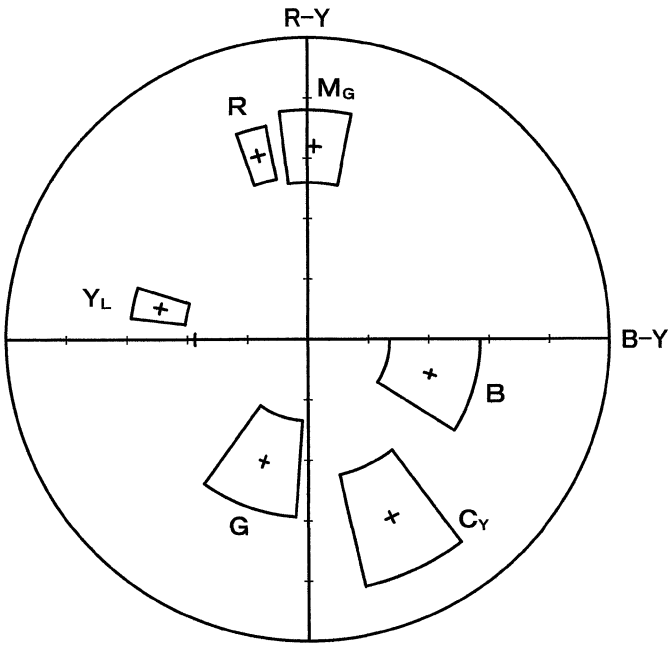
〈OPTICAL AXIS FRAME〉



Take a copy of OPTICAL AXIS FRAME with a clear sheet for use.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.



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DCR-TRV240/TRV340

RMT-814

SONY

SERVICE MANUAL

Level 2

Ver 1.2 2003. 04

US Model
Canadian Model
E Model
Hong Kong Model
DCR-TRV240/TRV340
Korea Model
Tourist Model
Argentina Model
Brazilian Model
DCR-TRV340

SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(PV02-016)

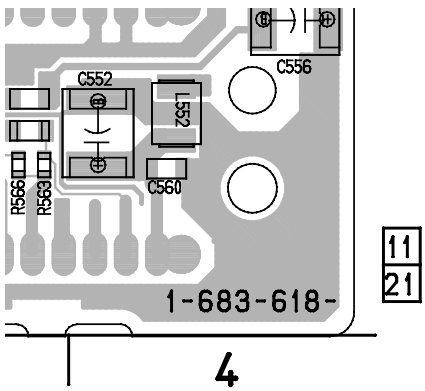
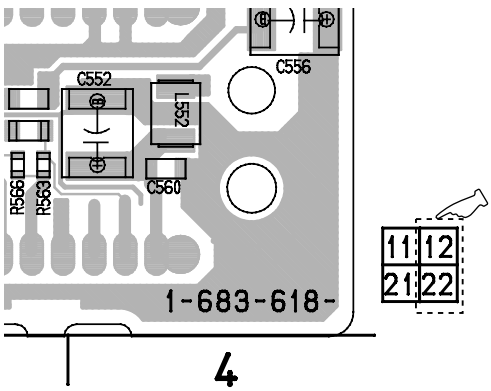
CD-357 board part No. suffix is changed.

	Before changed	After changed
CD-357 BOARD	1-683-618-11 1-683-618-21	1-683-618-12 1-683-618-22

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

☞ Added portion.

Page	Before change (-11/-21)	After change (-12/-22)
4-7	**CD-357 BOARD** 	**CD-357 BOARD** 

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DCR-TRV240/TRV340

RMT-814

SONY

SERVICE MANUAL

Level 2

Ver 1.4 2005. 06

US Model
Canadian Model
E Model
Hong Kong Model
DCR-TRV240/TRV340
Korea Model
Tourist Model
Argentina Model
Brazilian Model
DCR-TRV340

SUPPLEMENT-2

File this supplement-2 with the Service Manual.

- Change of supplied accessories
- Change of repair parts list

DCR-TRV240/TRV340
9-929-932-83

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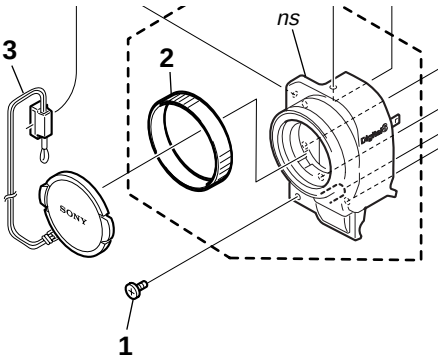
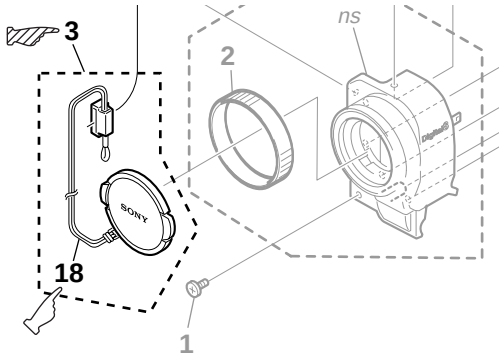
SECTION 6 REPAIR PARTS LIST

6-1. EXPLODED VIEWS

: Changed portion : Added portion

Page	Before change	After change
6-1	**6-1-1. OVERALL SECTION** 	

Ref. No.	Part No.	Description	Remarks
3	X-3949-376-1	CAP (N) ASSY, LENS	
———	———	———————————	

Ref. No.	Part No.	Description	Remarks
3	X-3952-030-1	SERVICE ASSY, LENS CAP (N)	
18	3-979-194-12	STRING, CAP	

6-2. ELECTRICAL PARTS LIST

Page	Before change				After change			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-26E			ACCESSORIES **********				ACCESSORIES **********	
		X-3949-376-1	CAP (N) ASSY, LENS			X-3952-030-1	SERVICE ASSY, LENS CAP (N)	
		———	———————————			3-979-194-12	STRING, CAP	

Revision History

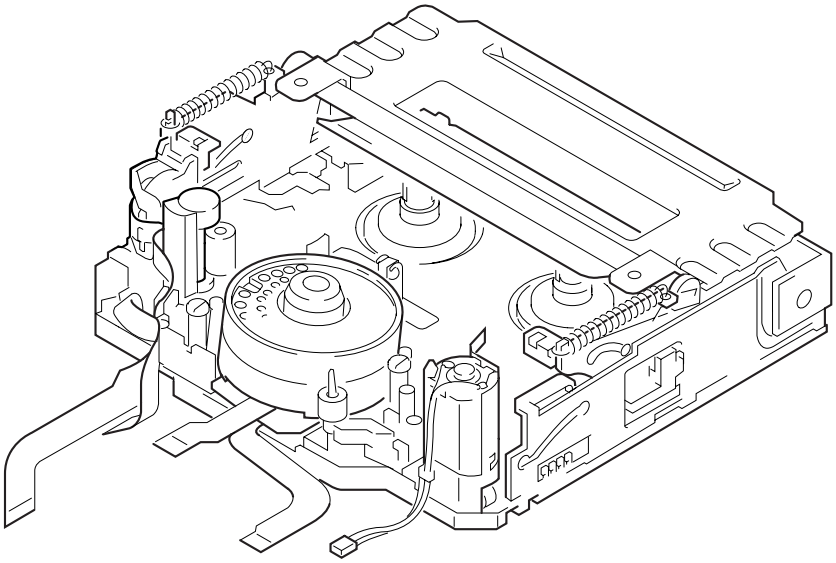
Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2002.01	Official Release	—	—
1.1	2002.06	Correction-1	Correction of Printed Wiring Boards and Parts No. S.M. correction: Page 4-12, 4-18, 6-6	Yes
1.2	2003.04	Supplement-1	CD-357 board part No. suffix is changed.	No
1.3	2003.10	Correction-1	Correction of the Parts No. S.M. correction: Page 6-4	Yes
1.4	2005.06	Supplement-2	Changed of the repair parts list.	No

8mm Video MECHANICAL ADJUSTMENT MANUAL IX

Ver 1.0 2000. 12

M2000 MECHANISM

Please use this manual with the service manual of the respective models.



Digital 8 MECHANISM DECK

SONY

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1. Preparations for Check, Adjustment and Replacement of Mechanism Block

Before Replacement, Check or Adjustment

- Refer to the "DISASSEMBLY" section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When checking a mechanism ir making any adjustment to the mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section "1-2. Mode Selector II Operating Procedure" for details on how to enter the mode shown in a rectangle ____ mode in the sequent sections of this manual.

* Assemble and adjust the parts in the USE mode if any mode is not specified in this manual.

1-1. Service Jigs and Tools

Ref. No.	Name		Part code	Jig inscription	Used for
J-1	Cleaning fluid		Y-2031-001-0		
J-2	Wiping cloth		7-741-900-53		
J-3	Super-fine applicator (made by Nippon Applicator (P752D))				
J-4	Head eraser		commercially available		Tape path
J-5	Mirror (small oval type)		J-6080-840-A	GD-2038	Tape path
J-6	Alignment tape	NTSC : WR5-1NP	8-967-995-02		For tracking adjustment
		PAL : WR5-1CP	8-967-995-07		
J-7	FWD/RVS take-up torque cassette		J-6080-824-A	GD-2086	
J-8	Tape path screwdriver		J-6082-026-A		For tape guide adjustment
J-9	Adjustment remote commander (RM-95 upgrated)		J-6082-053-B		Tape path (for setting the path mode)(Note)
J-10	MD process table		J-6082-166-A		
J-11	Floil grease		7-662-001-39		
J-12	Torque screwdriver		J-9049-330-A		
J-13	Mode Selector II		J-6082-282-B		
J-14	Mode Selector II conversion board		J-6082-516-A		
J-15	Mode Selector II ROM, Ver 1.6		J-6082-314-E		
J-16	Thickness gauge		9-911-053-00		For capstan azimuth adjustment, LS cam plate position adjustment

Other required equipment:

- Oscilloscope
- Analog tester (20 kΩ)

Note: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

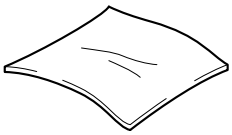
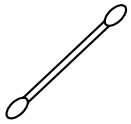
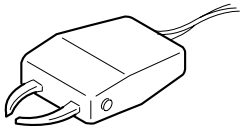
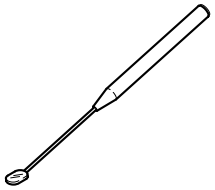
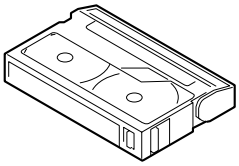
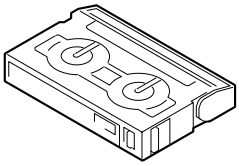
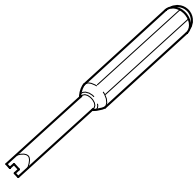
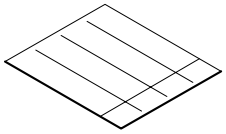
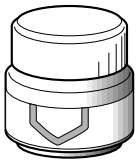
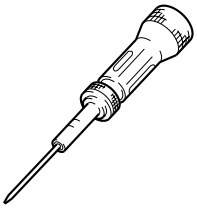
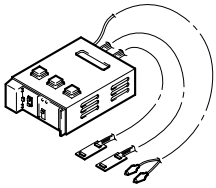
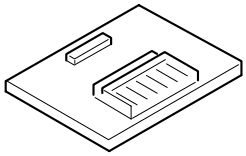
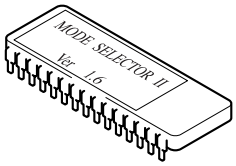
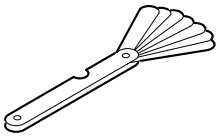
J-1	***J-2*** 	***J-3*** 	***J-4*** 	***J-5*** 
J-6 	***J-7*** 	***J-8*** 	***J-9***	***J-10*** 
J-11 	***J-12*** 	***J-13*** 	***J-14*** 	***J-15*** 
J-16 				

Fig. 1-1.

1-2. Mode Selector II Operating Procedure

1-2-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

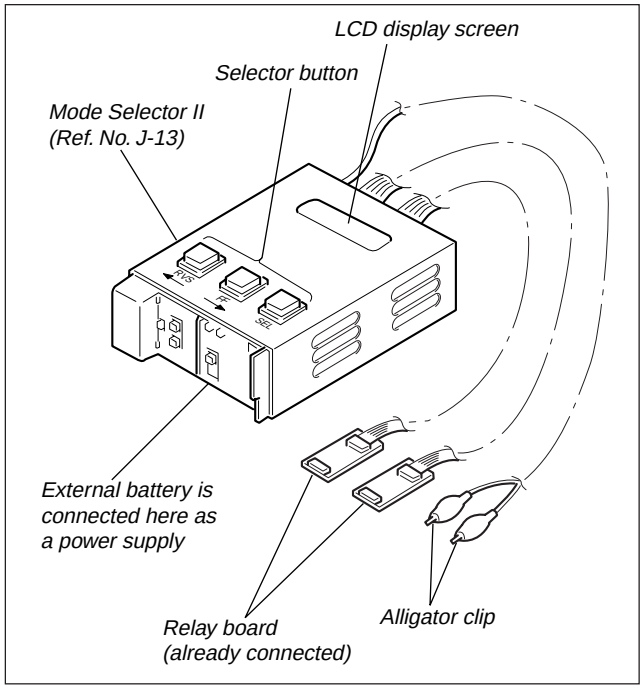


Fig. 1-2.

Mode Selector II (J-6082-282-B) connection diagram

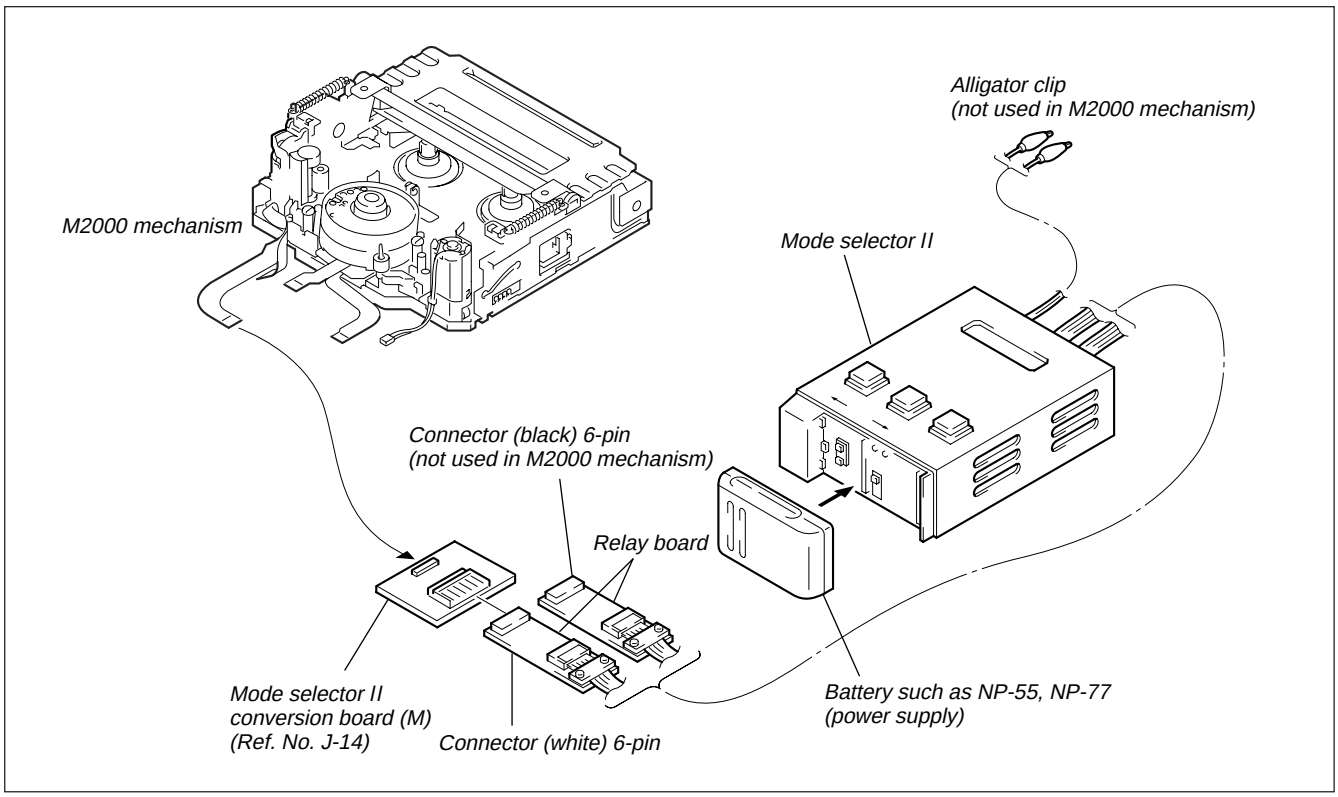
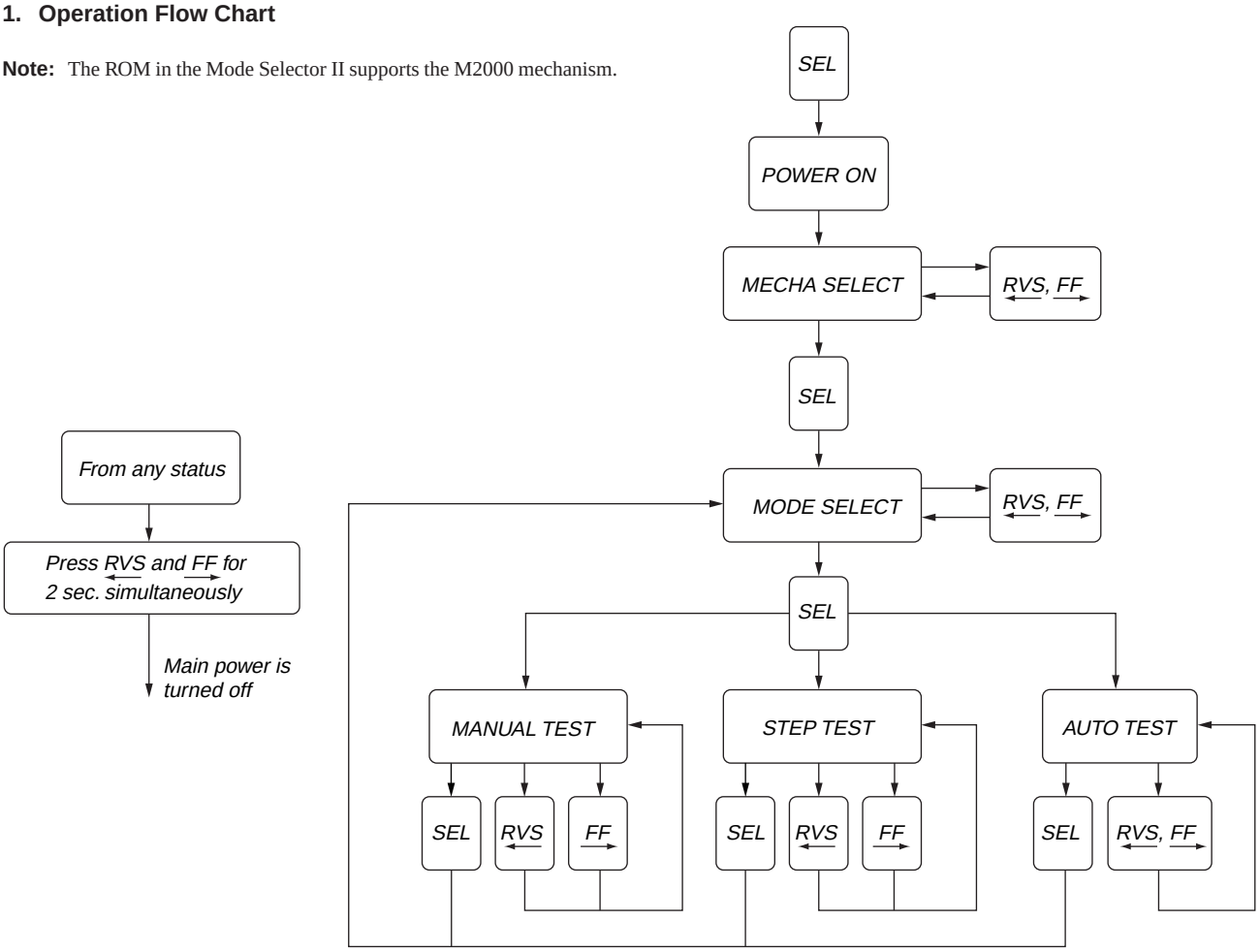


Fig. 1-3.

1-2-2. Operation

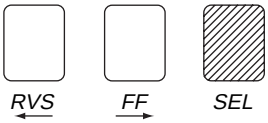
1. Operation Flow Chart

Note: The ROM in the Mode Selector II supports the M2000 mechanism.



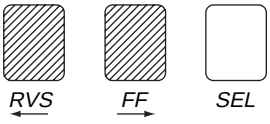
2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows.
Press the SEL button.



3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows.
Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the B mechanism.)

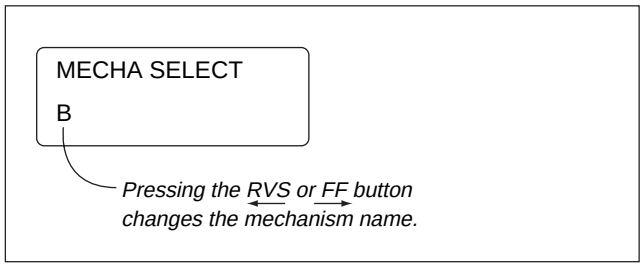


Fig. a

5. Test Type Select

Using the RVS and FF buttons, select a desired test type from the three types of "MANUAL", "STEP" and "AUTO". Selection is complete when the SEL button is pressed.

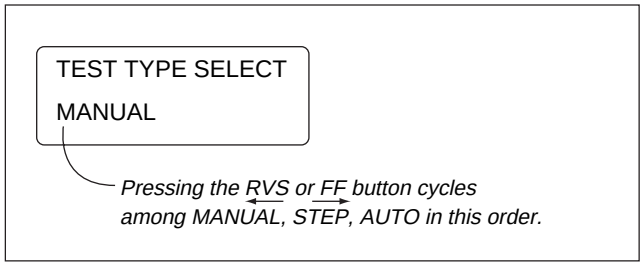


Fig. b

6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

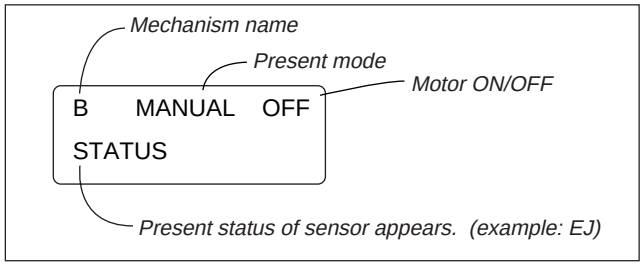


Fig. c

7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

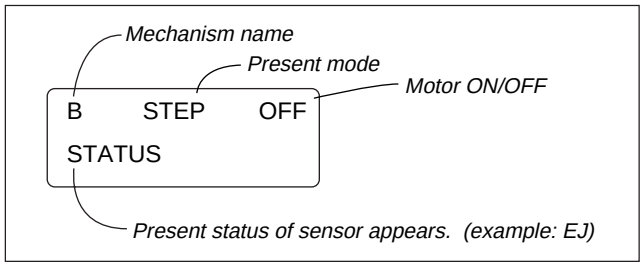


Fig. d

8. Auto Test

In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning on the RVS or FF button performs the same operation.

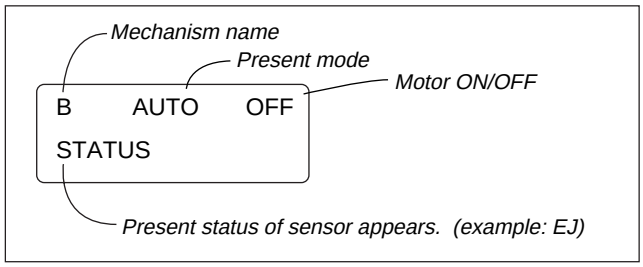


Fig. e

1-2-3. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the RVS or FF button. (The selected status appears on STATUS.)
EJ⟷USE⟷LOAD⟷STOP⟷TURN⟷RP⟷REW

Code (MD name)				M2000 Mechanism
A	B	C		
1	0	0	1	EJ
1	1	0	2	USE
0	1	0	3	LOAD
0	1	1	4	STOP
0	0	1	5	TURN
0	0	0	6	RP
1	0	1	7	REW

[0 is common and short.
1 is common and open.]

1-2-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.

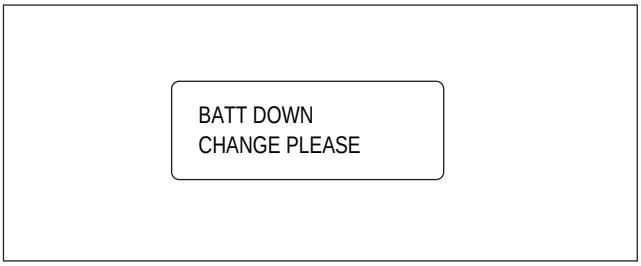


Fig. f

2. Periodic Inspection and Maintenance

- Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

Caution: Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

2-2. Tape Path System Cleaning
(Refer to Fig. 2-1.)

1) Set the EJECT state. Clean the tape running path (TG1, 2, 3, 4, 5, 6 and 7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. No. J-3) moistened with cleaning fluid.

Note 1: Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. No. J-3).
Note 2: Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.
Note 3: When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

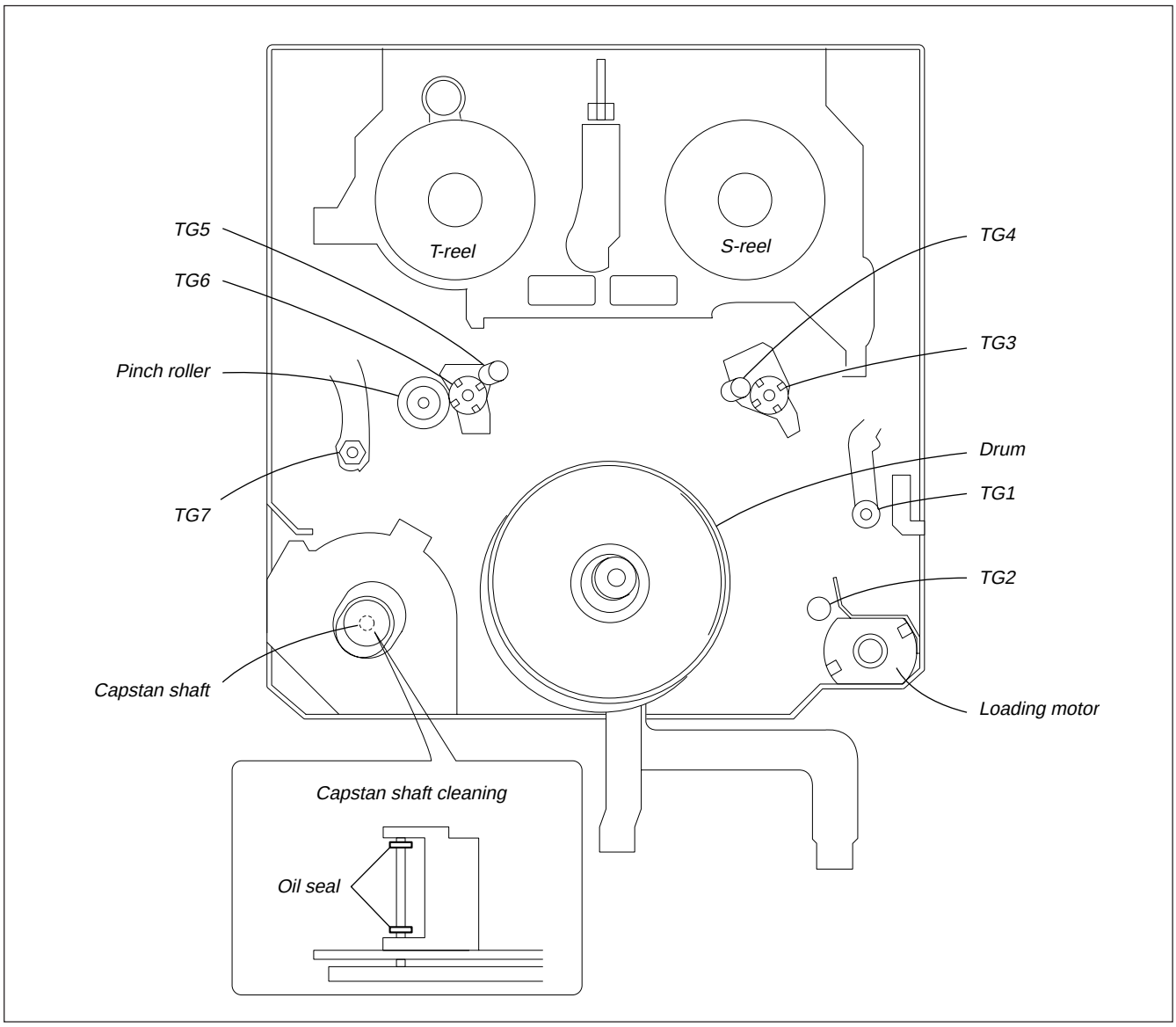


Fig. 2-1

2-3. Periodic Inspection List

Maintenance and inspection item		Operating hours (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Tape running surface cleaning	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
	Rotary drum cleaning and degaussing	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
Drive mechanism	Timing belt	—	☆	—	☆	—	☆	—	☆	—	☆	
Drive mechanism	Capstan shaft	—	☆	—	☆	—	☆	—	☆	—	☆	Never attach oil to the tape running path during periodic inspection.
Drive mechanism	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
Performance check	Back-tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○: Cleaning, ☆: Check

Note: When the machine is overhauled, replace the parts referring to the above list.

2-4. Appling Oil and Grease

When replacing or assembling the parts, use oil and grease while referring to the following.

On Oil

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Oil: Part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- The oil used for bearings must not contain any dust or other materials, otherwise excessive abrasion and seizure of the bearing could occur.
- A drop of oil means the amount of oil as shown in the illustration in the right, which is the amount that is attracted to the top of a rod of 2 mm diameter.

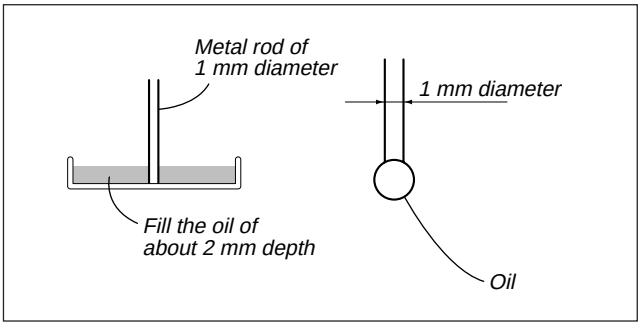


Fig. 2-2

On Grease

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Floil grease: Part No. 7-662-001-39
- Be sure to use grease into which dust is not mixed.
- The amount of grease is 1 to 1.5 mm diameter in length.

3. Before Replacement, Check or Adjustment

3-1. Phase Adjustment

The phase adjustment of this mechanism block has been adjusted by using the in-phase markings shown in the following figure. When replacing or assembling the parts, check the phase.

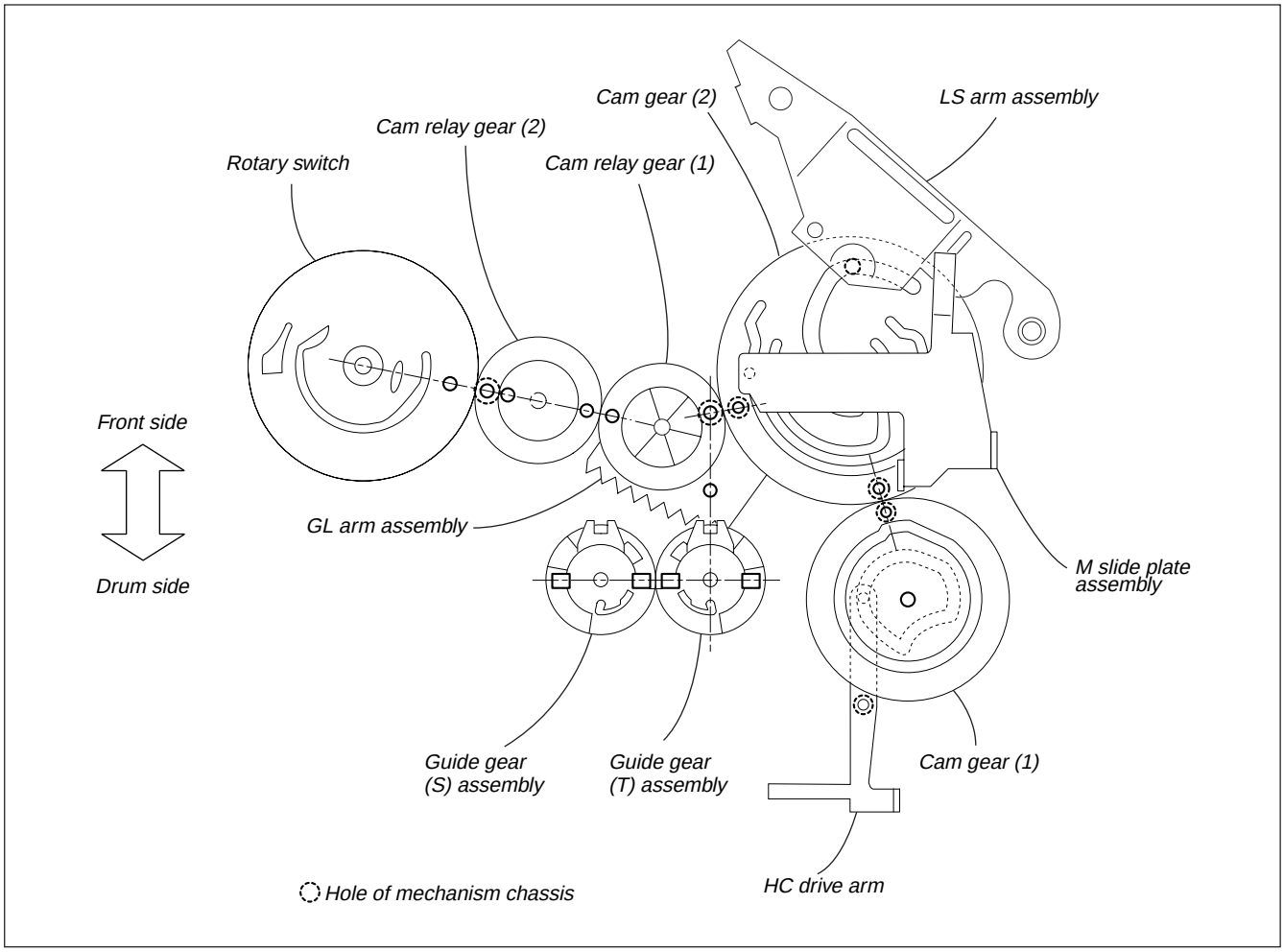


Fig. 3-1.

3-2. Cassette compartment assembly

1. Removal procedure

1) Set the [EJ] mode to move up the cassette compartment assembly ⑩.
2) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
3) Push the damper assembly ③ in the directions of the arrows Ⓓ and Ⓔ and remove it from the notch of the LS chassis block assembly.
4) Remove the two screws (camera pan2 main M1.4 × 1.6) ④.
5) With the cassette compartment assembly ⑩ half opened, move the face plate in the direction of the arrow Ⓕ and remove it from the grooves ⑥ and ⑦ on the LS chassis block assembly.
6) Remove the cassette holder (S) ⑧ and cassette holder (T) ⑨ of the cassette compartment assembly ⑩ from the groove on the LS chassis block assembly.

2. Attachment procedure

1) Set the [USE] mode.
2) Insert the cassette holder (S) ⑧ of the cassette compartment assembly ⑩ and cassette holder (T) ⑨ into the grooves on both sides of the LS chassis block assembly.
3) While moving down the cassette compartment assembly ⑩, lift up the face plate in the direction of the arrow Ⓕ and keep this status. Then, insert the face plate in the grooves ⑥ and ⑦ on the LS chassis block assembly.
4) Tighten the two screws (camera pan2 main M1.4×1.6) ④.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
5) Move the damper arm of the damper assembly ③ to the 4 o'clock position and insert the damper assembly into the hole on the LS chassis block assembly and the dowel of the cassette holder (T) ⑨.
6) Align the damper assembly ③ with the notch of the LS chassis block assembly and rotate the damper assembly ③ in the opposite direction to the arrow Ⓔ to fix it.

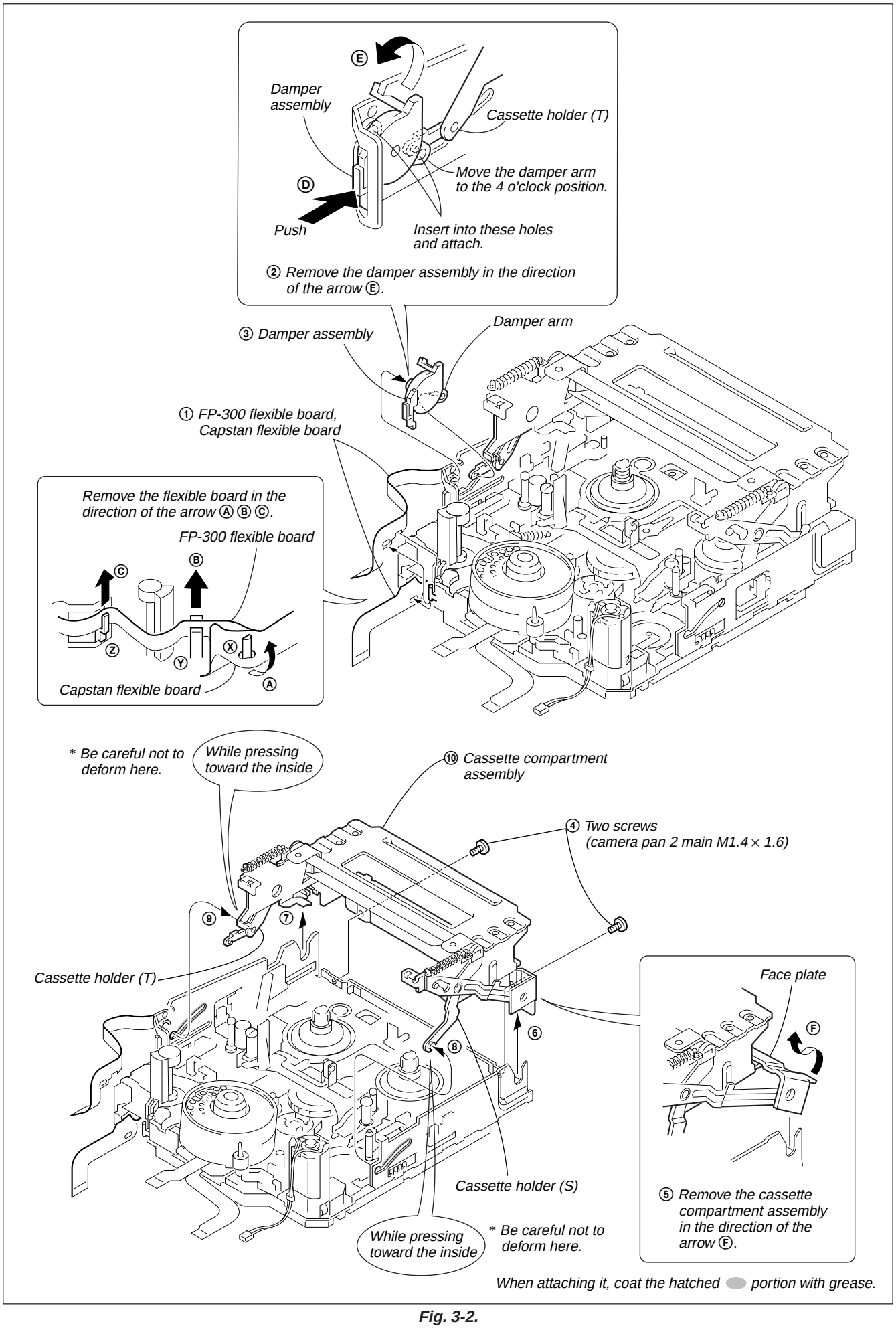

Ⓔ
Damper assembly
Cassette holder (T)
Move the damper arm to the 4 o'clock position.
Ⓓ
Push
Insert into these holes and attach.
② Remove the damper assembly in the direction of the arrow Ⓔ.
③ Damper assembly
Damper arm
① FP-300 flexible board, Capstan flexible board
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
* Be careful not to deform here.
While pressing toward the inside
⑩ Cassette compartment assembly
④ Two screws (camera pan 2 main M1.4 × 1.6)
⑨
⑦
Cassette holder (T)
⑥
⑧
Cassette holder (S)
While pressing toward the inside
* Be careful not to deform here.
Face plate
Ⓕ
⑤ Remove the cassette compartment assembly in the direction of the arrow Ⓕ.
When attaching it, coat the hatched portion with grease.

Fig. 3-2.

4. Check, Adjustment and Replacement

Note: For removal procedure of the cabinets, printed wiring boards and other parts, refer to "DISASSEMBLY" of the Service Manual of the respective models.

4-1. Drum Assembly

1. Removal procedure

1) Remove the three screws (drum fitting M1.4 × 2.5) ① fixing the drum and remove the drum.

2. Attachment procedure

1) Align the two reference holes A and B on the rear of the drum with the reference pins A and B of the drum base assembly.
2) Attach the drum with the three screws (drum fitting M1.4 × 2.5) ① in the order of Ⓐ, Ⓑ and Ⓒ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Clean the drum while referring to 2-1.
4) Adjust the tape path. (Refer to "4. Tape Path Adjustment".)

Note: Do not touch the outside circumference.

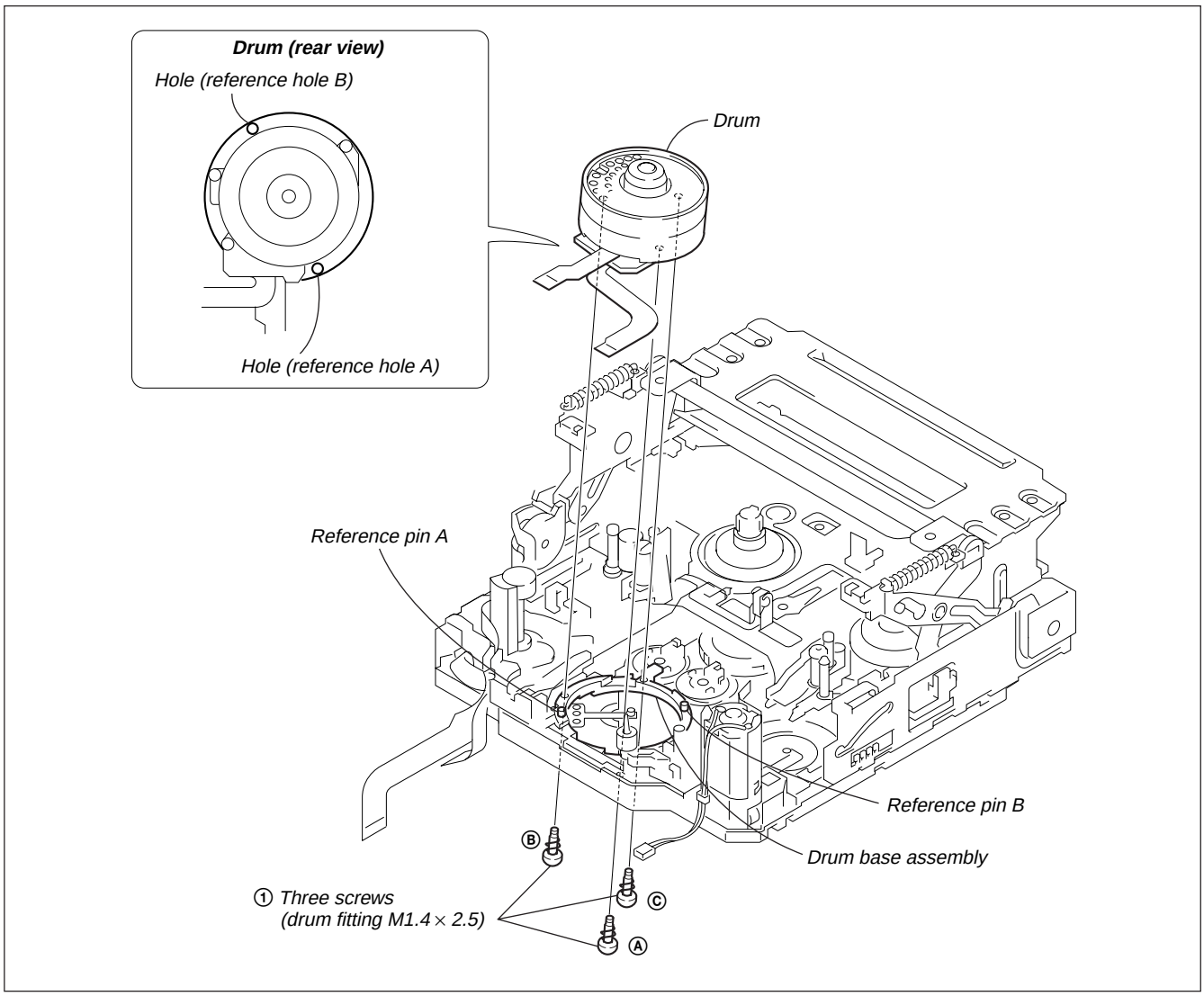


Fig. 4-1.

4-2. HCL Arm Assembly, Loading Motor Assembly

1. Removal procedure

1) Hook the HC arm spring in the direction of the arrow Ⓑ.
2) Remove the HCL arm assembly ② from the loading motor assembly ④.
3) Remove the screw (M1.4 × 2.5) ③.
4) Remove the three claws of the loading motor assembly ④ from the mechanism chassis assembly in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Coat the worm shaft and gear of the loading motor assembly ④ with grease.
2) Insert the three claws of the loading motor assembly ④ into the groove on the mechanism chassis assembly.
3) Attach the screw (M1.4 × 2.5) ③.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Check the position of the HCL arm assembly ② and the HC drive arm. Then attach the HCL arm assembly ② to the loading motor assembly ④.
5) Hook the HC arm spring ① on the notch of the loading motor assembly ④.
6) Clean the drum assembly. (Refer to section 2-1.)

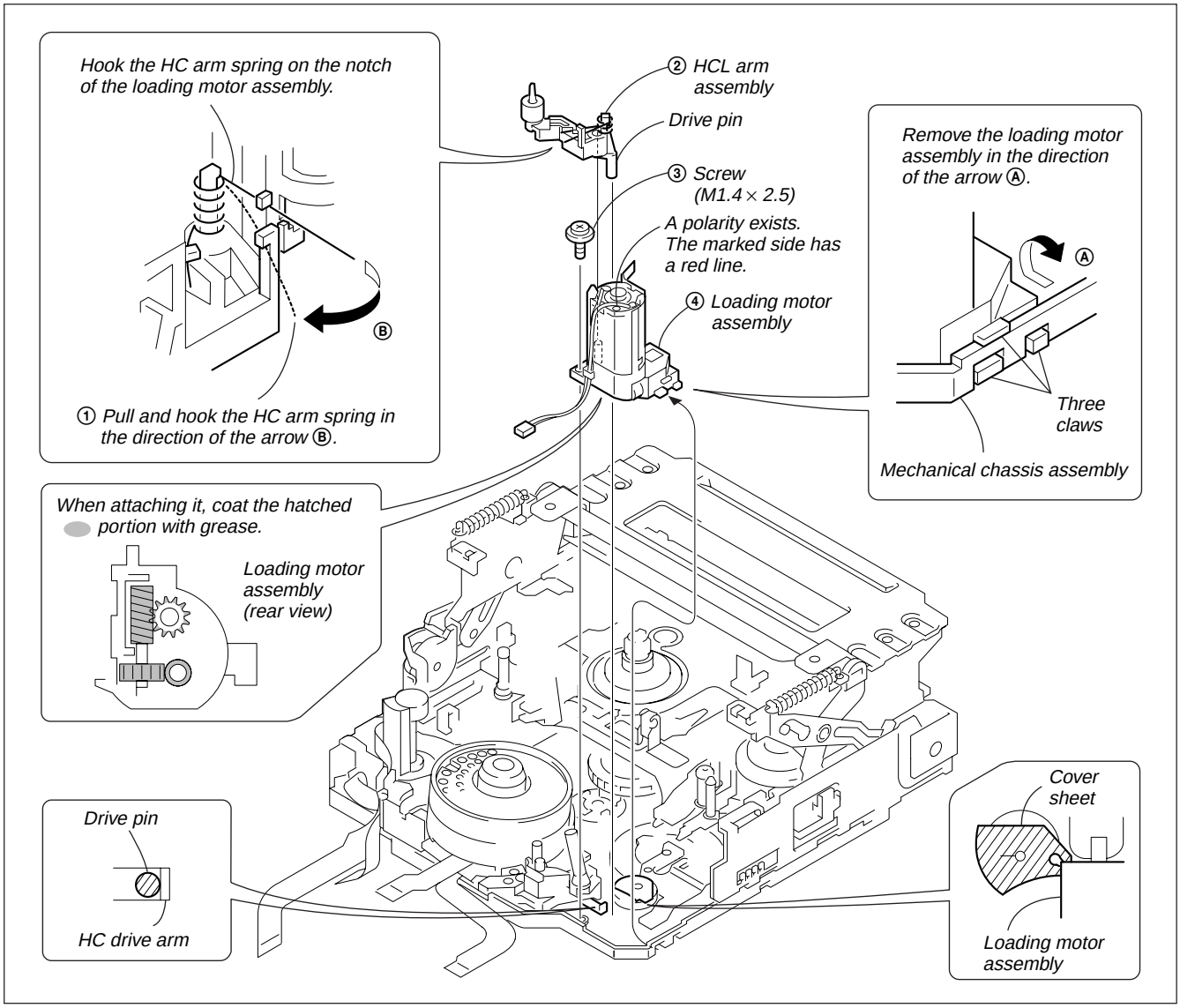

Hook the HC arm spring on the notch of the loading motor assembly.
Ⓑ
① Pull and hook the HC arm spring in the direction of the arrow Ⓑ.
② HCL arm assembly
Drive pin
③ Screw (M1.4 × 2.5)
A polarity exists. The marked side has a red line.
④ Loading motor assembly
Remove the loading motor assembly in the direction of the arrow Ⓐ.
Ⓐ
Three claws
Mechanical chassis assembly
When attaching it, coat the hatched portion with grease.
Loading motor assembly (rear view)
Drive pin
HC drive arm
Cover sheet
Loading motor assembly

Fig. 4-2.

4-3. Drum Base Assembly, Drum Earth

1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) from the holders Ⓧ, Ⓨ and Ⓩ in the direction of the arrow.
2) Remove the drum assembly. (Refer to section 4-1.)
3) Remove the screw (M1.4 × 2.5) ②.
4) Remove the claw Ⓓ of the guide rail T2 ③ from the hole Ⓔ of the drum base assembly in the direction of the arrow Ⓕ.
5) Remove the three screws (M1.4 × 2.5) ④.
6) Remove the drum base assembly ⑤ in the direction of the arrow.
7) Remove the screw (screw assy PW M1.7 × 2.6) ⑥.
8) Remove the drum earth ⑦ and earth spacer ⑧.

2. Attachment procedure

1) Attach the ground spacer ⑧ and drum ground ⑦ with the screw (screw assy PW M1.7 × 2.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Align the drum base assembly ⑤ with the reference pin and tighten the three screws (M1.4 × 2.5) ④ in the order of Ⓖ, Ⓗ and Ⓘ.
3) Insert the claw Ⓓ of the guide rail T2③ into the hole Ⓔ of the drum base assembly ⑤ and tighten the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 kgf•cm)
4) Remove the drum assembly. (Refer to 4-1.)
5) Attach the flexible wiring board (FP-300) ① and capstan flexible board to the drum base assembly.
6) Clean the tape running path. (Refer to 2-2.)

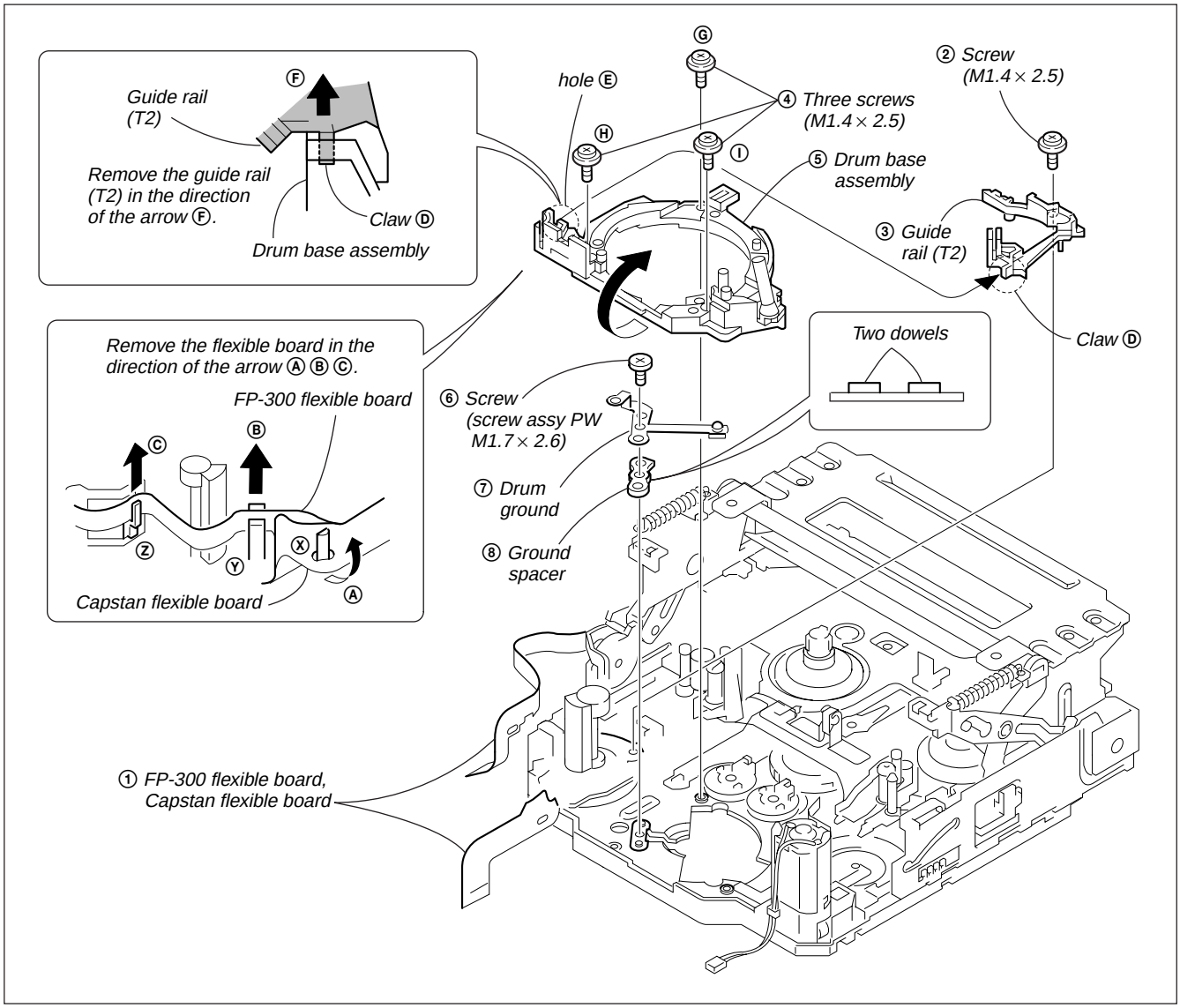


Fig. 4-3.

4-4. Guide Rail T2, Capstan Motor

1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
2) Remove the screw (M1.4 × 2.5) ②.
3) Remove the claw of the guide rail T2 ③ from the hole on the drum base assembly in the direction of the arrow Ⓓ.
4) Remove the six solderings ④.
5) Remove the FP-228 flexible wiring board (2P) (DEW sensor) ⑤.
6) Remove the two screws (camera pan2 main M1.4 × 1.6) ⑥ and the screw (SANG camera pan2 main M1.4 × 4.5) ⑦.
7) Remove the capstan motor ⑧.
8) Remove the capstan spring ⑨ (be careful not to drop the capstan spring) and timing belt ⑩.

2. Attachment procedure

1) Hook the timing belt ⑩ on the gear of the capstan motor ⑧, attach the capstan motor while aligning it with the reference boss of the mechanism chassis assembly.
2) Attach the screw (SANG camera pan2 M1.4 × 4.5) ⑦ and capstan spring ⑨. (temporally attachment)
3) Attach the two screws (camera pan2 M1.4 × 1.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the six solderings ④ to the FP-228 flexible wiring board ⑤ (2P) (DEW sensor) and the FP-299 flexible wiring board (4P).
5) Insert the guide rail T2 ③ into the hole on the drum base assembly and tighten the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the capstan flexible board and the flexible wiring board (FP-300) ① to the holders Ⓧ, Ⓨ and Ⓩ.
7) Adjust the height of the capstan motor using the thickness gauge (Ref. No. J-16). (Refer to 5-3.)

Note: Be careful not to touch the center of the capstan motor ⑩ shaft and the FP-228 flexible wiring board (DEW sensor) with soldering iron or other tool.

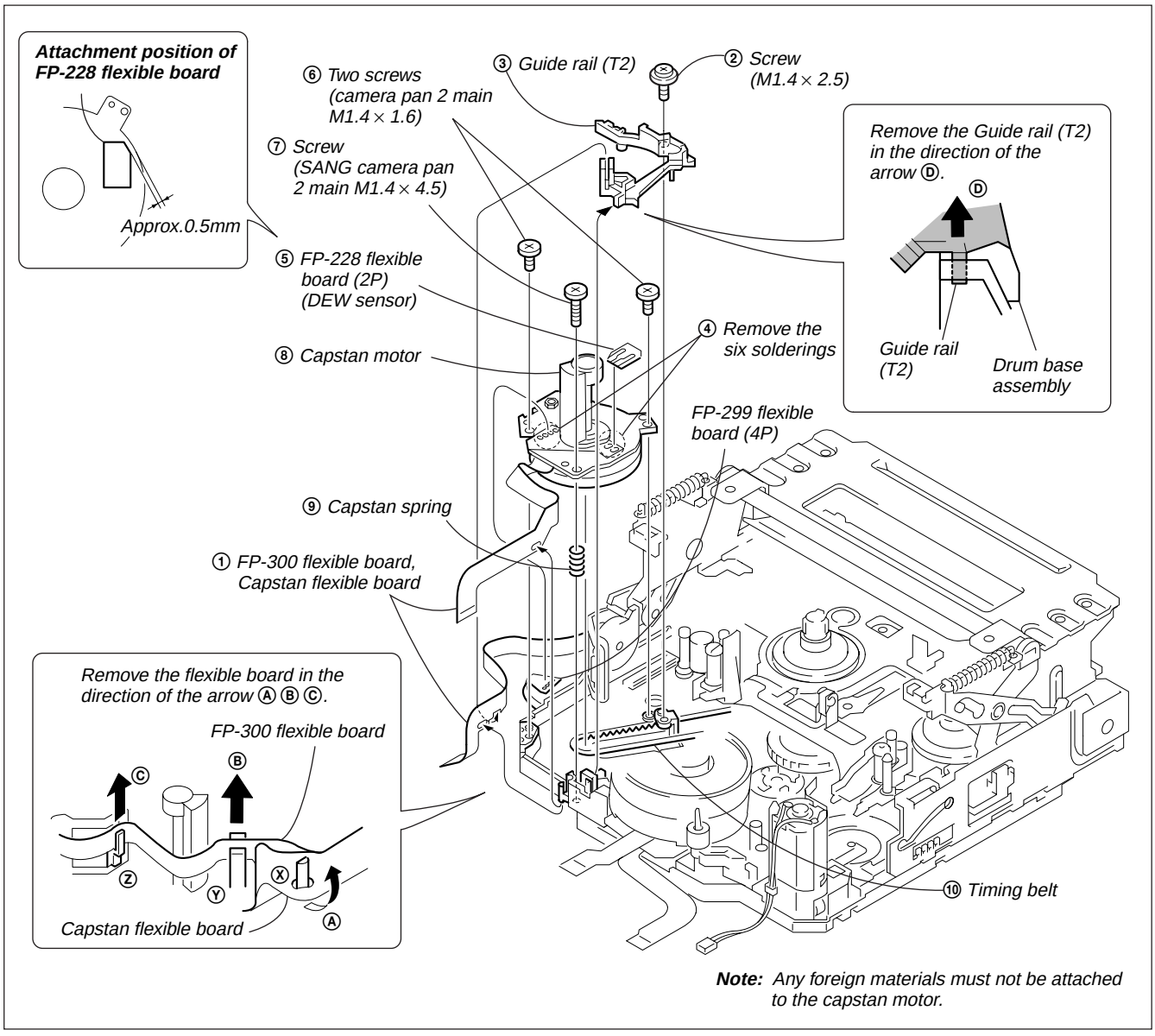

Attachment position of FP-228 flexible board
Approx.0.5mm
⑥ Two screws (camera pan 2 main M1.4 × 1.6)
③ Guide rail (T2)
② Screw (M1.4 × 2.5)
⑦ Screw (SANG camera pan 2 main M1.4 × 4.5)
Remove the Guide rail (T2) in the direction of the arrow Ⓓ.
Ⓓ
Guide rail (T2)
Drum base assembly
⑤ FP-228 flexible board (2P) (DEW sensor)
④ Remove the six solderings
⑧ Capstan motor
FP-299 flexible board (4P)
⑨ Capstan spring
① FP-300 flexible board, Capstan flexible board
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
⑩ Timing belt
Note: Any foreign materials must not be attached to the capstan motor.

Fig. 4-4.

4-5. Blind Plate, Lock Guide

1. Removal procedure

1) Remove the diode D001 (tape LED) ① from the notch of the plate ④.
2) Remove the flexible wiring board ② (FP-301) from T-shaped portion of the blind plate ④ in the direction of the arrow Ⓐ.
3) Remove the screw (camera pan2 main M1.4 × 1.6) ③.
4) Release the hook on the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ in the direction of the arrow Ⓑ.
5) Remove the reel release lever ⑤ in the direction of the arrow Ⓒ.

2. Attachment procedure

1) Attach the reel release lever ⑤ to the blind plate ④.
2) Hang the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ on the hook.
3) Attach the screw (camera pan2 main M1.4 × 1.6) ③.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the flexible wiring board (FP-301) ② to the T-shaped portion of the blind plate ④.
5) Attach the diode (tape LED) ① to the notch of the blind plate ④.

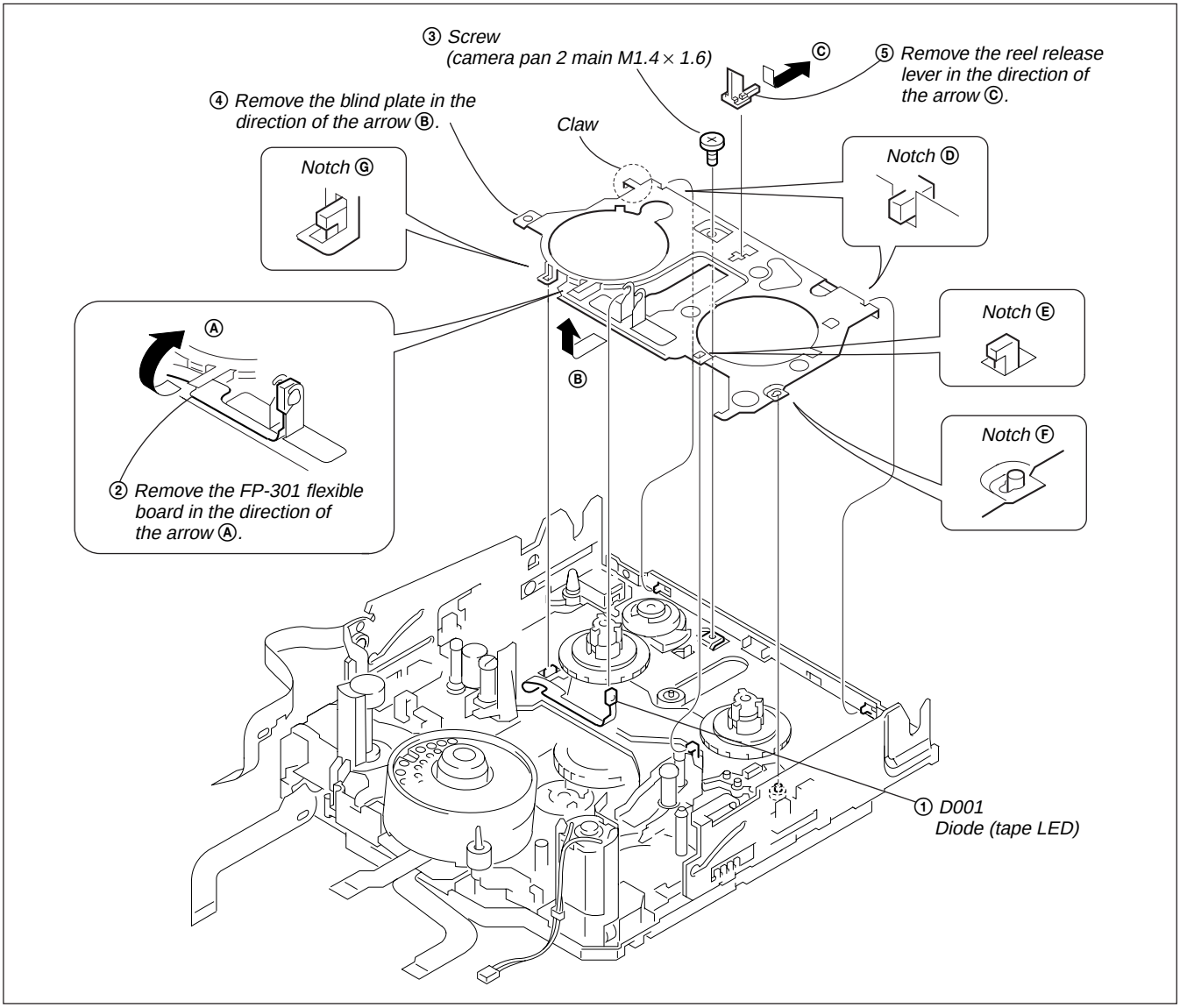

③ Screw
(camera pan 2 main M1.4 × 1.6)
Ⓒ
⑤ Remove the reel release lever in the direction of the arrow Ⓒ.
④ Remove the blind plate in the direction of the arrow Ⓑ.
Claw
Notch Ⓖ
Notch Ⓓ
Notch Ⓔ
Notch Ⓕ
Ⓐ
Ⓑ
② Remove the FP-301 flexible board in the direction of the arrow Ⓐ.
① D001
Diode (tape LED)

Fig. 4-5.

4-6. Reel Table (T) Assembly, T Soft Assembly

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Open the claw of the reel table T assembly ① in the directions of the arrows Ⓑ and Ⓒ and remove the reel table T assembly.
3) Remove the T soft assembly ② in the direction of the arrow Ⓐ.
4) Remove the T ratchet spring ③.
5) Remove the T ratchet arm ④ in the direction of the arrow Ⓓ.

2. Attachment procedure

1) Insert the T ratchet arm ④ into the groove on the LS chassis block assembly to attach it.
2) Attach the T ratchet spring ③ to the notch of the T ratchet arm ④ and LS chassis block assembly.
3) Insert the T soft assembly into the groove on the LS chassis block assembly.
4) Check the location of the reel table T assembly and attach the LS chassis block assembly to the shaft.
5) Attach the blind plate. (Refer to 4-5.)

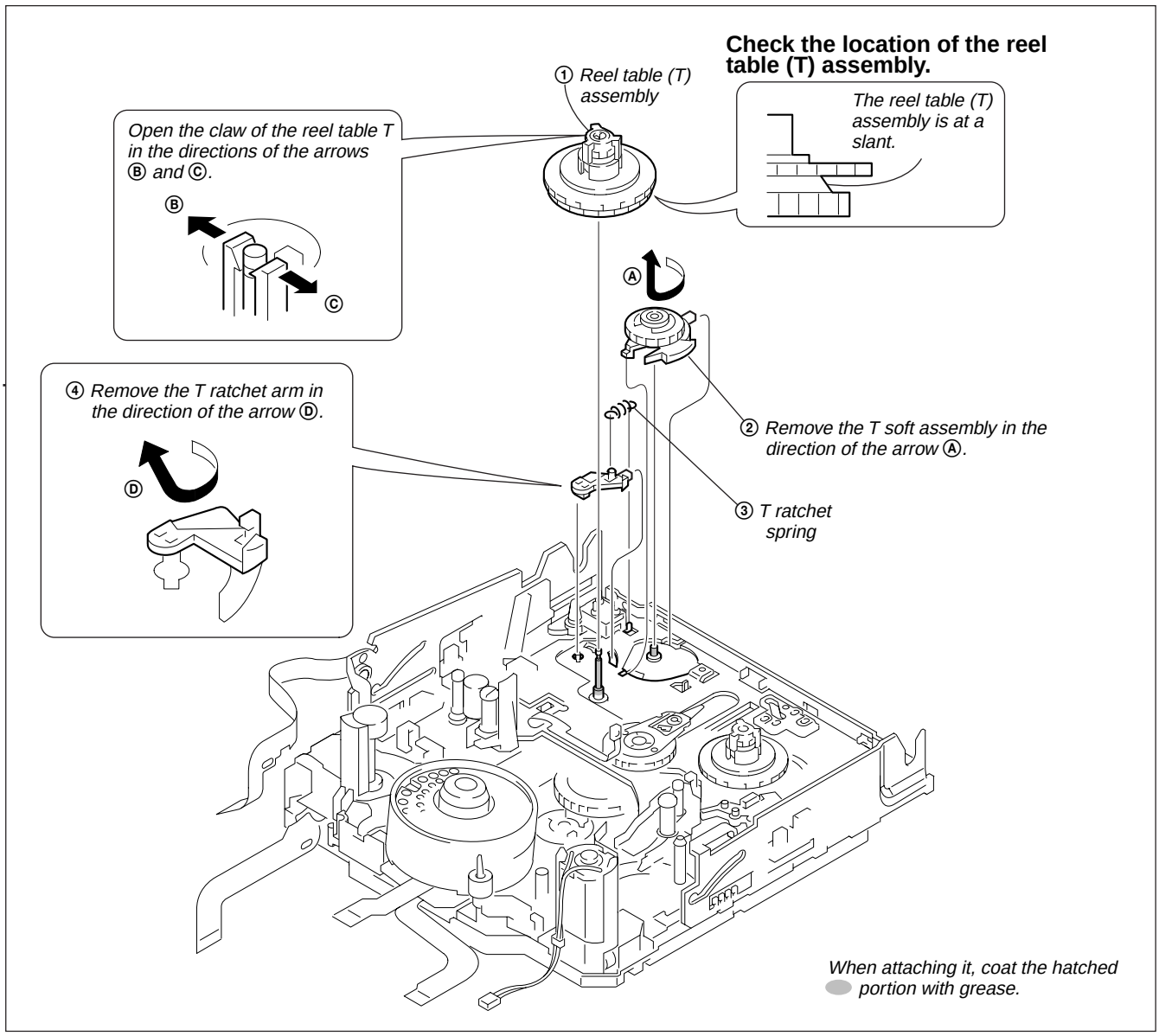

Check the location of the reel table (T) assembly.
① Reel table (T) assembly
The reel table (T) assembly is at a slant.
Open the claw of the reel table T in the directions of the arrows Ⓑ and Ⓒ.
Ⓑ
Ⓒ
Ⓐ
④ Remove the T ratchet arm in the direction of the arrow Ⓓ.
Ⓓ
② Remove the T soft assembly in the direction of the arrow Ⓐ.
③ T ratchet spring
When attaching it, coat the hatched portion with grease.

Fig. 4-6.

4-7. S Ratchet RE Plate, Cassette Guide S

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the RE return plate spring ①.
3) Remove the S ratchet spring ②.
4) Remove the S ratchet arm ③ in the direction of the arrow Ⓐ.
   Note: Do not reuse the S ratchet arm.
5) Remove the S ratchet RE plate.
6) Remove the screw (camera tapping M1.4 × 2)⑤.
7) Remove the cassette guide S ⑥ in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Attach the cassette guide S ⑥ to the notch of the LS chassis block assembly with the screw (camera tapping M1.4 × 2).
2) Attach the S ratchet RE plate ④ to the shaft of the LS chassis block assembly.
3) Attach the S ratchet arm ③ to the shaft of the LS chassis block assembly. At this time, the dowel of the S ratchet RE plate ④ must be inserted into the U-shaped notch of the S ratchet arm ③.
4) Hook the S ratchet spring ② on the notch of the S ratchet arm and attach it to the notch of the LS chassis block assembly.
5) Attach the RE return plate spring ① to the notch of the LS chassis block assembly.
6) Attach the blind plate. (Refer to 4-5.)

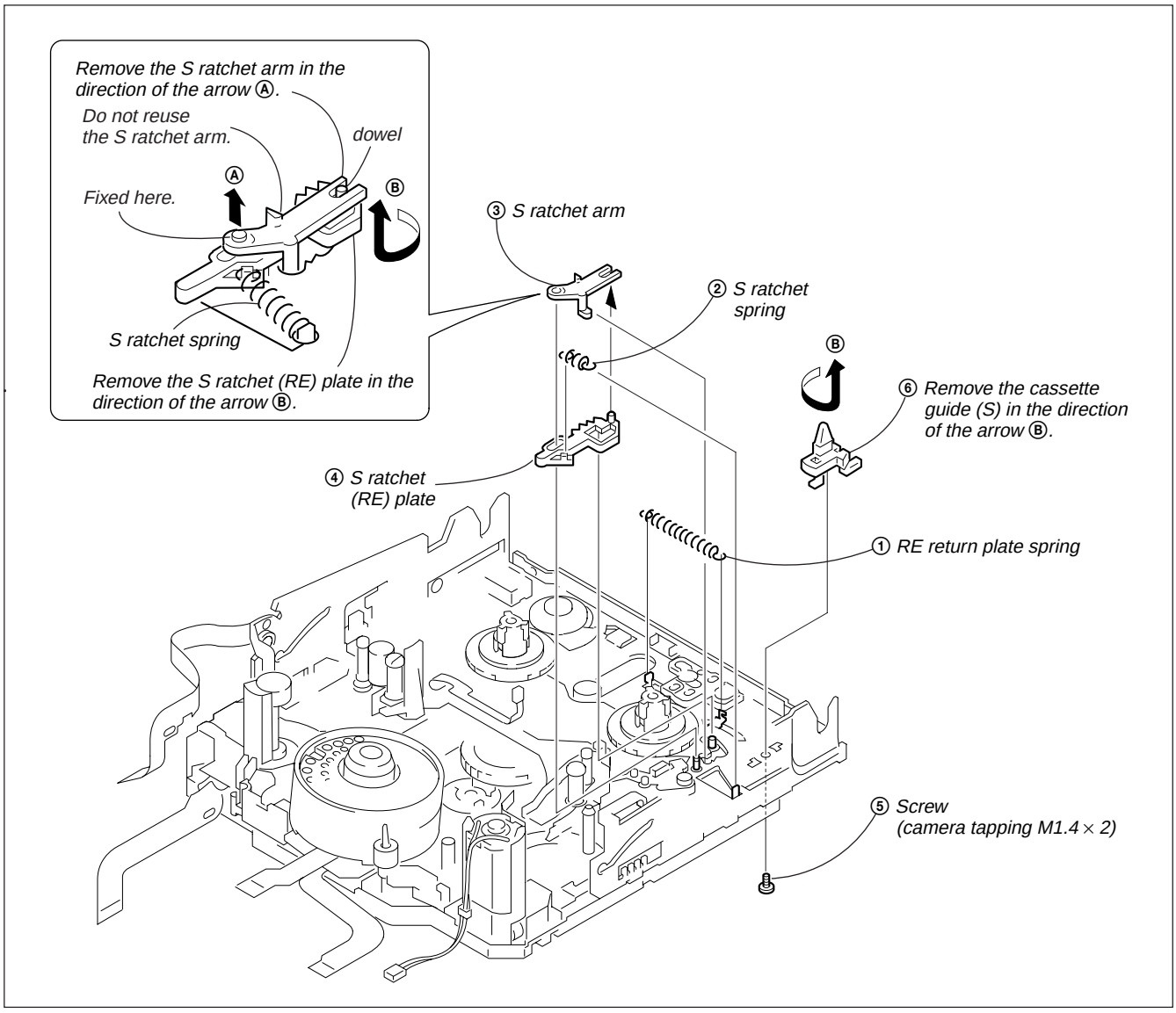

Remove the S ratchet arm in the direction of the arrow Ⓐ.
Do not reuse the S ratchet arm.
dowel
Fixed here.
Ⓐ
Ⓑ
S ratchet spring
Remove the S ratchet (RE) plate in the direction of the arrow Ⓑ.
③ S ratchet arm
② S ratchet spring
Ⓑ
⑥ Remove the cassette guide (S) in the direction of the arrow Ⓑ.
④ S ratchet (RE) plate
① RE return plate spring
⑤ Screw (camera tapping M1.4 × 2)

Fig. 4-7.

4-8. R Drive Gear Assembly, LS Cam Plate

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the lumiler cut washer (0.98 × 3 × 0.13) ①.
3) Remove the R drive gear assembly ②.
4) Remove the HLC cut (1.8 × 4 × 0.5) ③ and the two screws (precision type3 +P1.7 × 1.8) ④.
5) Remove the LS cam plate ⑤.

2. Attachment procedure

1) Attach the R drive gear assembly ② with the lumiler cut washer (0.98 × 3 × 0.13) ①.
2) Align the LS cam plate ⑤ with the two dowels of the LS chassis block assembly, temporarily fix the LS cam plate ⑤ with the two screws (precision type3 +P1.7 × 1.8), then attach it with the HLC cut (1.8 × 4 × 0.5) ③.
3) Adjust the position of the LS cam plate. (Refer to 4-9.)

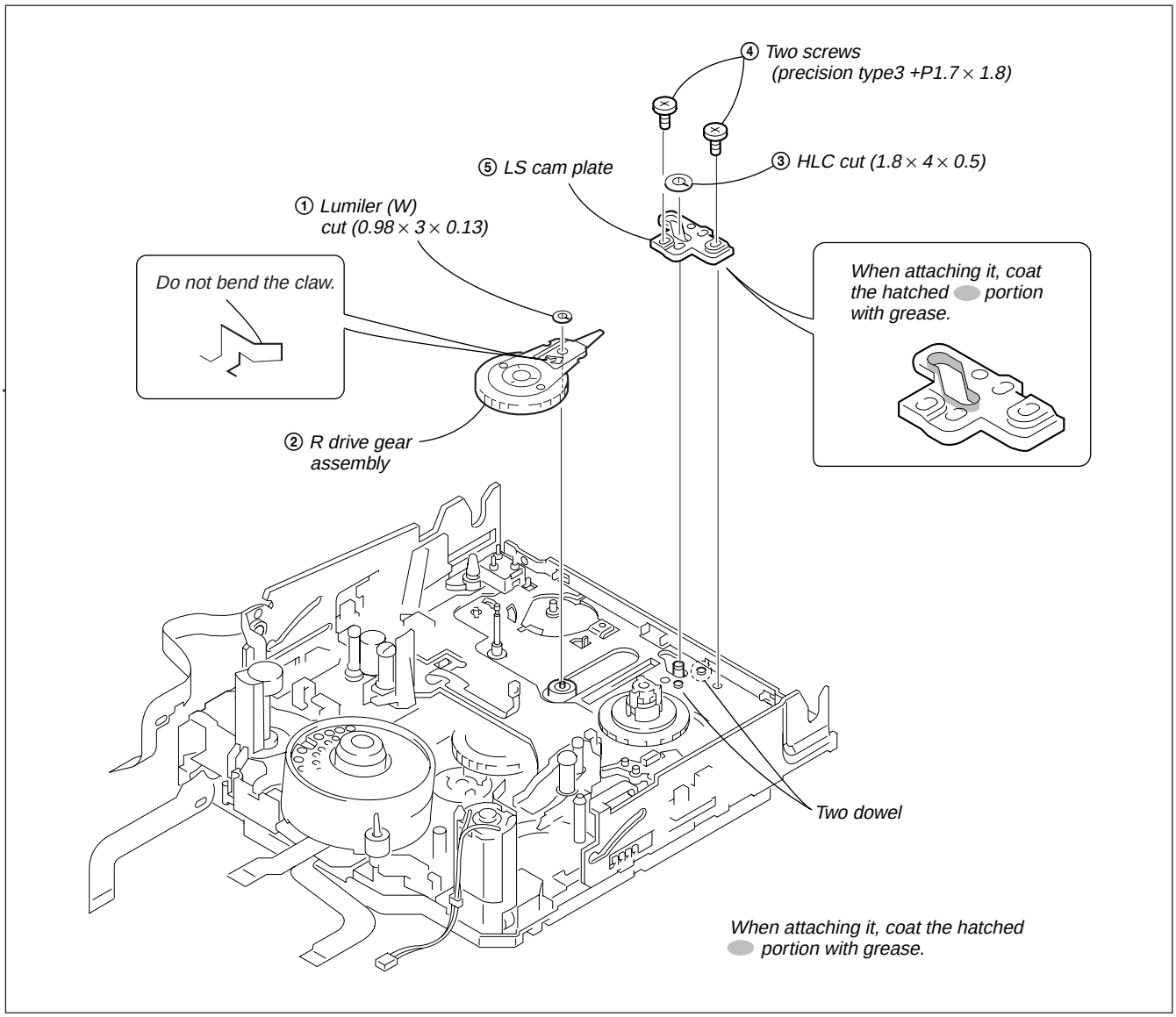

④ Two screws
(precision type3 +P1.7 × 1.8)
⑤ LS cam plate
③ HLC cut (1.8 × 4 × 0.5)
① Lumiler (W)
cut (0.98 × 3 × 0.13)
Do not bend the claw.
When attaching it, coat the hatched portion with grease.
② R drive gear assembly
Two dowel
When attaching it, coat the hatched portion with grease.

Fig. 4-8.

4-9. LS Cam Plate Position Adjustment

1. Adjustment Procedure

1) Perform loading of the LS chassis block assembly ① until the tip of the guide base (S) assembly reaches the drum base assembly.
2) Loosen the two screws (precision type3 +P1.7 × 1.8) ② of the LS cam plate and slide the LS chassis block assembly to the drum side so as to remove play.
3) Insert the thickness gauge 0.6 mm (Ref. No. J-16) between the LS cam plate and the LS chassis block assembly. Push the LS cam plate in the direction opposite to the drum to remove play.
4) Fix the two screws (precision type3 +P1.7 × 1.8) ②.
Tightening torque: 0.108 ± 0.01 N•m (1.1 kgf•cm)

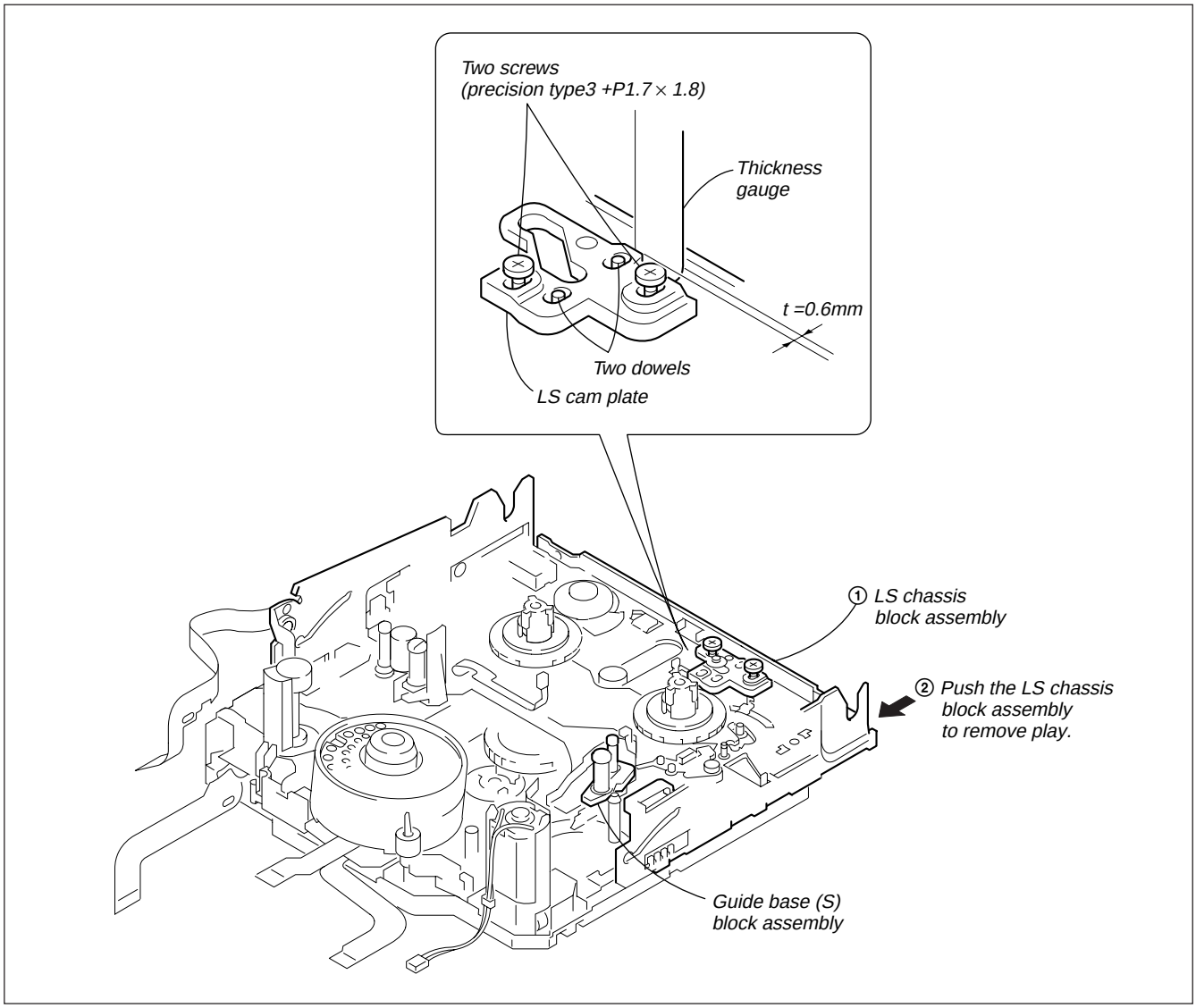

Two screws
(precision type3 +P1.7 × 1.8)
Thickness gauge
t =0.6mm
Two dowels
LS cam plate
① LS chassis block assembly
② Push the LS chassis block assembly to remove play.
Guide base (S) block assembly

Fig. 4-9.

4-10. LS Chassis Block Assembly

1. Removal procedure

1) Move the LS chassis block assembly between USE and LOAD.
2) Remove the blind plate. (Refer to 4-5.)
3) Remove the R drive gear assembly. (Refer to 4-8.)
4) Remove the HCL cut (1.8 × 4 × 0.5) ①.
5) Remove the three screws (M1.4 × 2.5) ②.
6) Remove the LS chassis block assembly ③ in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Insert the LS guide roller and LS guide T2 pin of the mechanical chassis block assembly into the slot of the LS chassis block assembly ④.
2) Insert the pin of the LS arm assembly into the cam groove on the LS cam plate, face the TG7 drive pin ⑤ in the direction of the arrow Ⓑ, and insert it to the two slot of the mechanical chassis. Then, tighten the three screws (M1.4 × 2.5) ② in the order of Ⓒ, Ⓓ and Ⓔ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Attach the HCL cut (1.8 × 4 × 0.5) ① to the pin of the LS arm assembly.
4) Attach the R drive gear assembly. (Refer to 4-8.)
5) Attach the blind plate. (Refer to 4-5.)
6) Clean the tape running path. (Refer to 2-2.)

Note: Each arm must move smoothly.

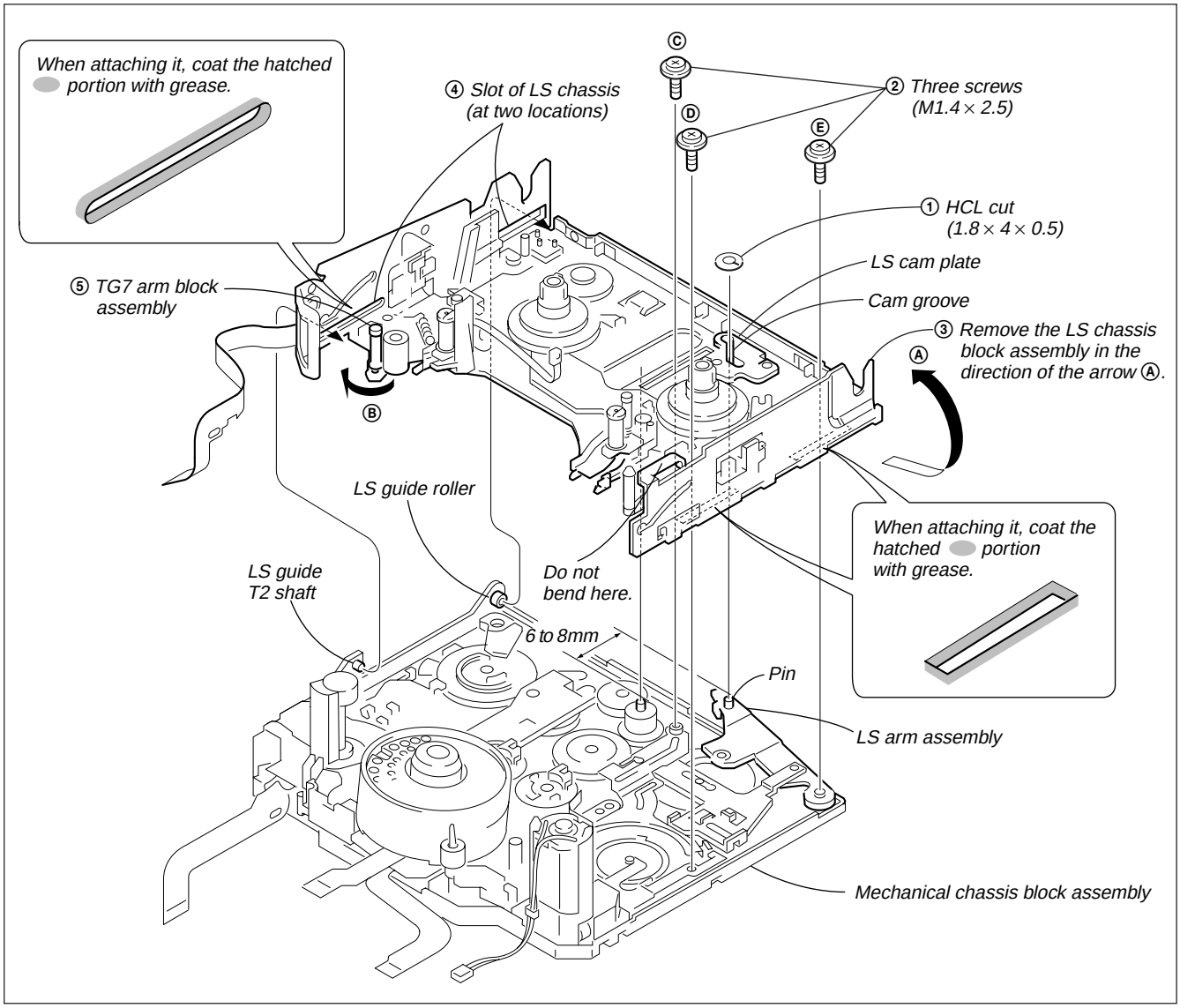

When attaching it, coat the hatched portion with grease.
④ Slot of LS chassis (at two locations)
Ⓒ
Ⓓ
Ⓔ
② Three screws (M1.4 × 2.5)
① HCL cut (1.8 × 4 × 0.5)
LS cam plate
Cam groove
⑤ TG7 arm block assembly
Ⓑ
③ Remove the LS chassis block assembly in the direction of the arrow Ⓐ.
Ⓐ
LS guide roller
When attaching it, coat the hatched portion with grease.
LS guide T2 shaft
Do not bend here.
6 to 8mm
Pin
LS arm assembly
Mechanical chassis block assembly

Fig. 4-10.

4-11. TG7 Arm Block Assembly, Pinch Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 M1.4 × 1.6) ①.
3) Remove the TG7 retainer ② in the direction of the arrow.
4) Remove the TG7 arm block assembly ⑥ and TG7 arm spring ⑦.
5) Remove the pinch roller arm assembly ③.
6) Remove the P lim arm roller ④ and pinch arm load spring ⑤.

2. Attachment procedure

1) Attach the P lim arm roller ④ to the pinch roller arm assembly ③.
2) Insert one end of the pinch arm load spring ⑤ into the hole on the rising metal sheet of the LS chassis block assembly, and hook the other end of the spring on the position setting protrusion of the LS-057 board.
3) Attach the pinch roller arm assembly ③ to the shaft of the LS chassis block assembly, and hook the pinch arm load spring ⑤ on the rising metal sheet of the pinch roller assembly ③.
4) Hook the TG7 arm spring ⑦ on the shaft of the LS chassis block assembly while the hook side of the spring is facing downward.
5) When attaching the TG7 arm block assembly ⑥ to the shaft of the LS chassis block assembly, hook the hook side of the TG7 arm spring ⑦ on the rising metal sheet of the LS chassis block assembly and hook the top side of the spring to the notch of the TG7 arm block assembly ⑥.
6) Attach the TG7 retainer ② with the screw (camera pan2 M1.4 × 1.6) ①.
7) Remove the LS chassis block assembly. (Refer to 4-10.)
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
8) Clean the tape running path. (Refer to 2-2.)

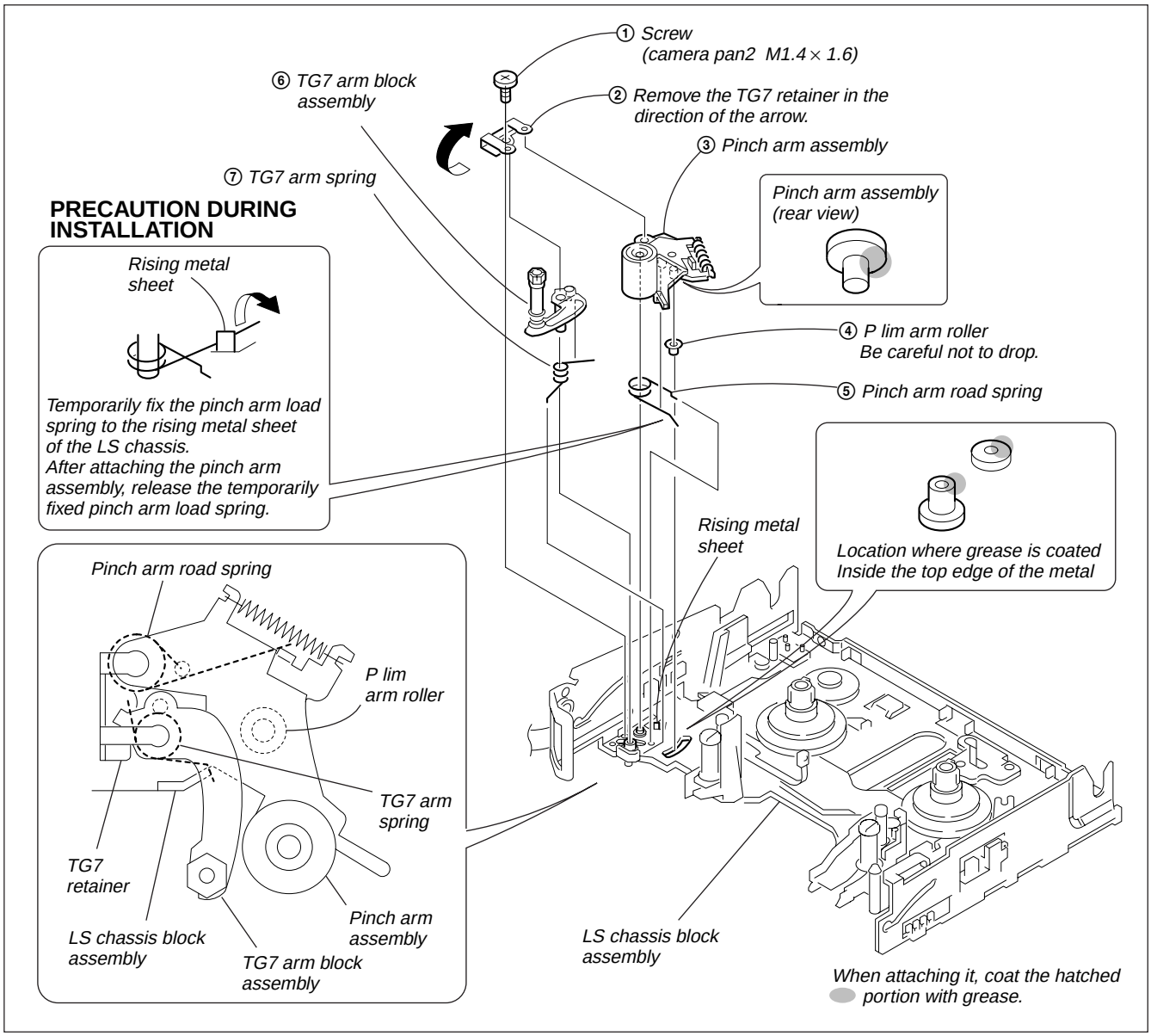

① Screw
(camera pan2 M1.4 × 1.6)
⑥ TG7 arm block assembly
② Remove the TG7 retainer in the direction of the arrow.
③ Pinch arm assembly
⑦ TG7 arm spring
Pinch arm assembly (rear view)
PRECAUTION DURING INSTALLATION
Rising metal sheet
Temporarily fix the pinch arm load spring to the rising metal sheet of the LS chassis.
After attaching the pinch arm assembly, release the temporarily fixed pinch arm load spring.
④ P lim arm roller
Be careful not to drop.
⑤ Pinch arm road spring
Rising metal sheet
Location where grease is coated
Inside the top edge of the metal
Pinch arm road spring
P lim arm roller
TG7 arm spring
TG7 retainer
LS chassis block assembly
Pinch arm assembly
TG7 arm block assembly
LS chassis block assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-11.

4-12. Guide Base (T) Block Assembly, Guide Base (S) Block Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Align the claw of the guide base (T) block assembly ① with the notch of the guide arm T and remove the guide base (T) block assembly.
3) Remove the screw (M1.4 × 2.5) ② and remove the guide rail (T) ③.
4) Align the claw of the guide base (S) block assembly ④ with the notch of the guide arm S and remove the guide base (S) block assembly.
5) Remove the screw (M1.4 × 2.5) ⑤ and remove the guide rail (S) ⑥.

2. Attachment procedure

1) Align the holes on the guide rail (S) ⑥ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (S) ⑥ with the screw (M1.4 × 2.5) ⑤.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Attach the guide base (S) block assembly ④ while aligning it with the groove on the guide arm S.
3) Align the holes on the guide rail (T) ③ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (T) ③ with the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the guide base (T) block assembly ① while aligning it with the groove on the guide arm T.
   Note: Do not forget to hook the plate spring.
5) Withdraw the joint portion of the guide arm S and the guide arm T in the directions of the arrows Ⓐ and Ⓑ.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
7) Clean the tape running path. (Refer to 2-2.)

Note: Be careful of the shape of the guide base T/S block assembly.
Guide base (T) block assembly = Guide base (small)
Guide base (S) block assembly = Guide base (large)

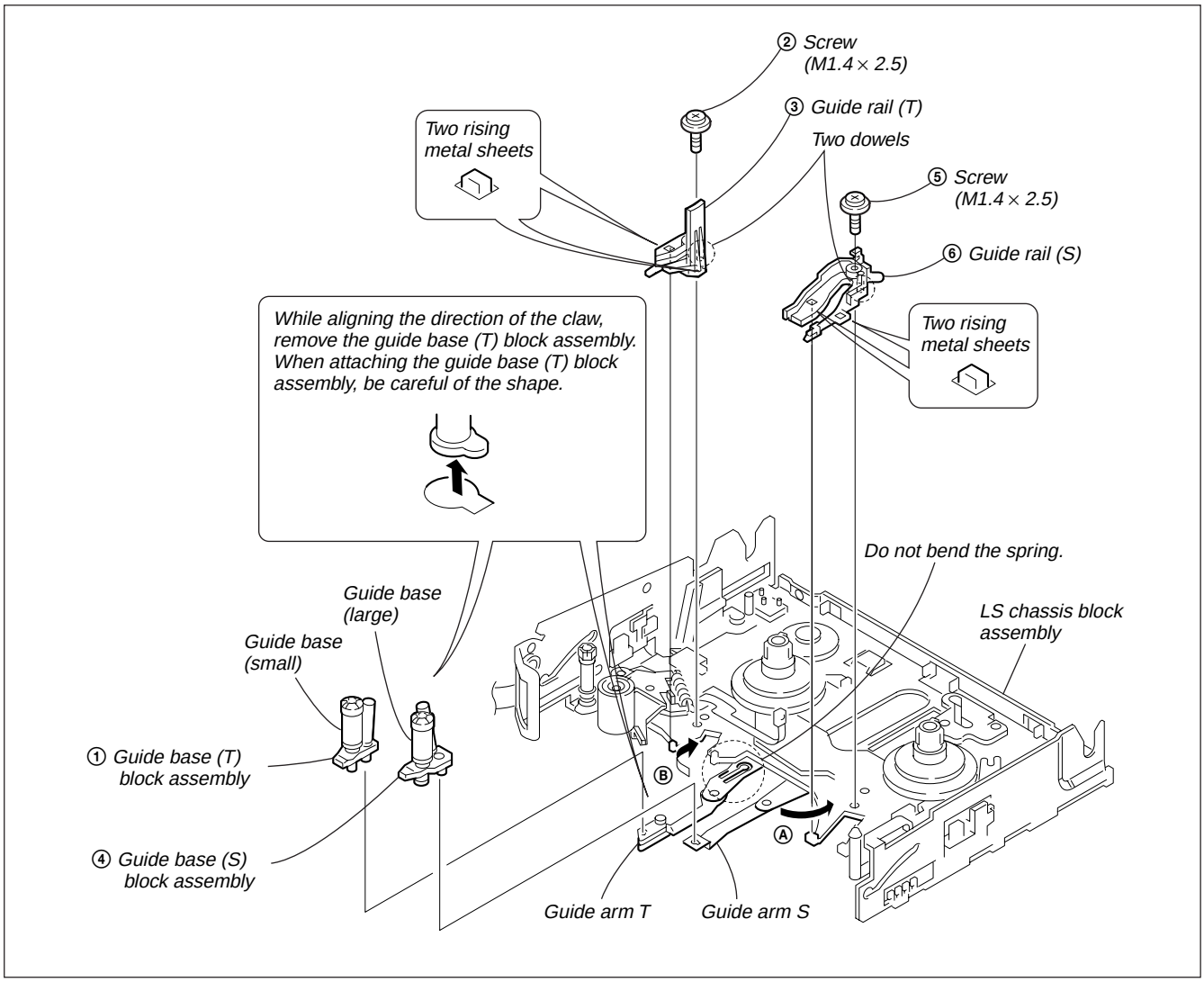

② Screw (M1.4 × 2.5)
③ Guide rail (T)
Two dowels
⑤ Screw (M1.4 × 2.5)
⑥ Guide rail (S)
Two rising metal sheets
Two rising metal sheets
While aligning the direction of the claw, remove the guide base (T) block assembly. When attaching the guide base (T) block assembly, be careful of the shape.
Do not bend the spring.
Guide base (large)
Guide base (small)
LS chassis block assembly
① Guide base (T) block assembly
④ Guide base (S) block assembly
Ⓑ
Ⓐ
Guide arm T
Guide arm S

Fig. 4-12.

4-13. TG1 Arm, Reel Table (S) Assembly, Push Switch (3Key)

1. Removal procedure

1) Remove the TG1 arm spring ①.
   Note: Take note of the position where the spring has been hooked.
2) Remove the TG1 arm ②.
3) Open the claw of the reel table (S) assembly ④ in the directions of the arrows Ⓑ and Ⓒ and remove the reel table S assembly.
4) Remove the RVS arm spring ⑤.
5) Rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and remove the BT band assembly ⑥.
6) Remove the lock guide ⑦.
7) Remove the four solderings of the LS-057 board.
8) Remove the two claws ⑨ of the cassette guide T ⑫ from the notch of the LS chassis.
9) Remove the push switch (3key) ⑪ by releasing the two claws of the cassette guide T ⑫.

2. Attachment procedure

1) Attach the push switch (3key) ⑪ to the cassette guide T ⑫ with the two claws ⑩.
2) Attach the cassette guide T ⑫ to the notch of the LS chassis block assembly with the two claws ⑨.
3) Solder the cassette guide T ⑫ to the LS-057 board at the four locations.
4) Attach the lock guide ⑦.
5) Attach the BT band assembly ⑥.
6) Check the location of the reel table S ④. Then, rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and insert the band of the BT band assembly ⑥ into the groove on the side.
7) Attach the BT band assembly to the TG1 arm ② and attach it to the mechanism chassis block assembly.
8) Check the shape of the hook of the TG1 arm spring ①. Hook one end of the spring on the TG1 arm ②. Then, hook the other end of the spring on the same location of the LS chassis block assembly where you have taken note when the spring is removed.
9) Attach the RVS arm spring.
10) Check the TG1 back-tension. (Refer to 5-1.)
    Note: The BT band assembly ⑤ must be completely inserted into the groove on the side of the reel table (S) ④.

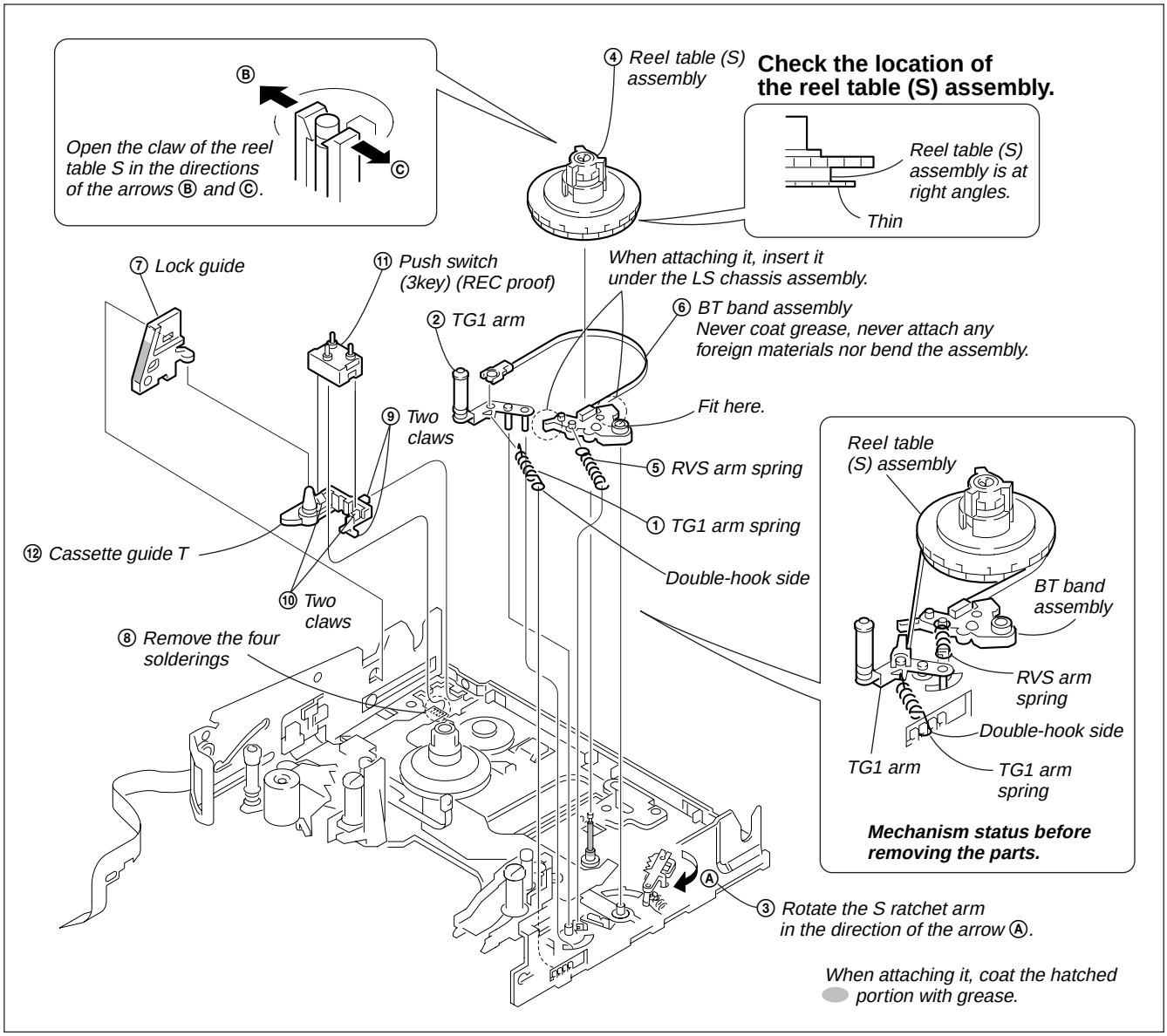

Ⓑ
Ⓒ
Open the claw of the reel table S in the directions of the arrows Ⓑ and Ⓒ.
④ Reel table (S) assembly
Check the location of the reel table (S) assembly.
Reel table (S) assembly is at right angles.
Thin
⑦ Lock guide
⑪ Push switch (3key) (REC proof)
When attaching it, insert it under the LS chassis assembly.
② TG1 arm
⑥ BT band assembly
Never coat grease, never attach any foreign materials nor bend the assembly.
Fit here.
⑨ Two claws
⑤ RVS arm spring
① TG1 arm spring
⑫ Cassette guide T
Double-hook side
⑩ Two claws
⑧ Remove the four solderings
Reel table (S) assembly
BT band assembly
RVS arm spring
Double-hook side
TG1 arm
TG1 arm spring
Mechanism status before removing the parts.
Ⓐ
③ Rotate the S ratchet arm in the direction of the arrow Ⓐ.
When attaching it, coat the hatched portion with grease.

Fig. 4-13.

4-14. Hall Element (H001, H002 (T/S Reel)), Photo Transistor (Q001, Q002 (Tape Top/Tape End), D001 (Tape LED)), LED (D001 (Tape LED))

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS grease cover.
3) Remove the two solderings and remove Q001 (tape top).
4) Remove the two solderings and remove Q002 (tape end).
5) Remove the two solderings and remove D001 (tape LED).
6) Remove the four solderings respectively from H001 (T reel) and H002 (S reel) and remove the H001 and H002.

2. Attachment procedure

1) Solder H001 (T reel) and H002 (S reel) respectively at the four locations.
2) Solder Q002 (tape end) at the two locations.
3) Solder Q001 (tape top) at the two locations.
4) Solder D001 (tape LED) at the two locations.
5) Attach the LS grease cover.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

Note: Be careful of the plarities of the Hall element (H001, H002), Photo-transistor (Q001, Q002) and LED (D001).

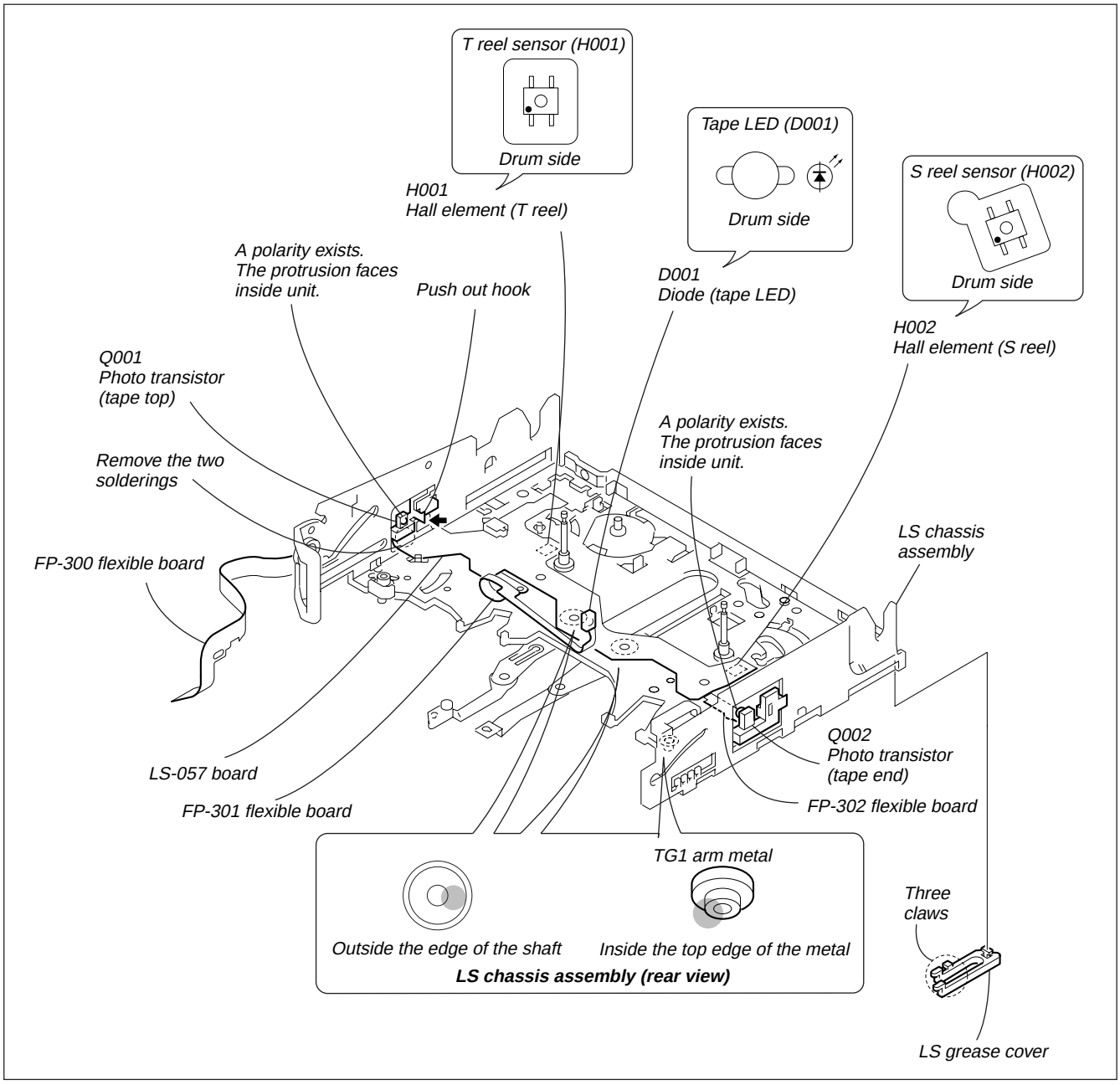


Fig. 4-14.

4-15. LS Guide Roller, Guide Lock Plate (T), Pinch Pusher Assembly, Eject Arm

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS guide roller ①.
3) Remove the P pressure plate spring ②.
4) Remove the HLW cut (0.98 × 3 × 0.25) ③.
5) Remove the pitch pressure plate assembly ④ in the direction of the arrow Ⓐ.
6) Remove the relay gear ⑤.
7) Remove the screw (camera pan2 M1.4 × 1.6) ⑥.
8) Remove the guide lock plate (T) ⑦ in the direction of the arrow Ⓑ.
9) Remove the eject arm spring ⑧ and HLW cut (0.98 × 3 × 0.25) ⑨.
   Note: Do not reuse the HLW cut.
10) Remove the eject arm ⑩.

2. Attachment procedure

1) Attach the eject arm spring ⑧ to the eject arm ⑩.
2) Hook one end of the eject arm spring ⑧ on the protrusion of the main chassis block assembly and attach the eject arm to the shaft.
3) Attach the HLW cut (0.98 × 3 × 0.25) ⑨.
   Do not reuse the HLW cut.
4) Attach the guide lock plate T ⑦ while aligning it with the notches Ⓒ and Ⓓ.
5) Attach the screw (camera pan2 M1.4 × 1.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the relay gear ⑤.
7) Attach the pinch pusher plate ④ with the HLW cut (0.98 × 3 × 0.25) ③.
8) Attach the P pressure plate spring ②.
   Insert the concave side of the LS guide roller ① into the shaft to attach the LS guide roller.
   Note: Insert the roller completely.
9) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

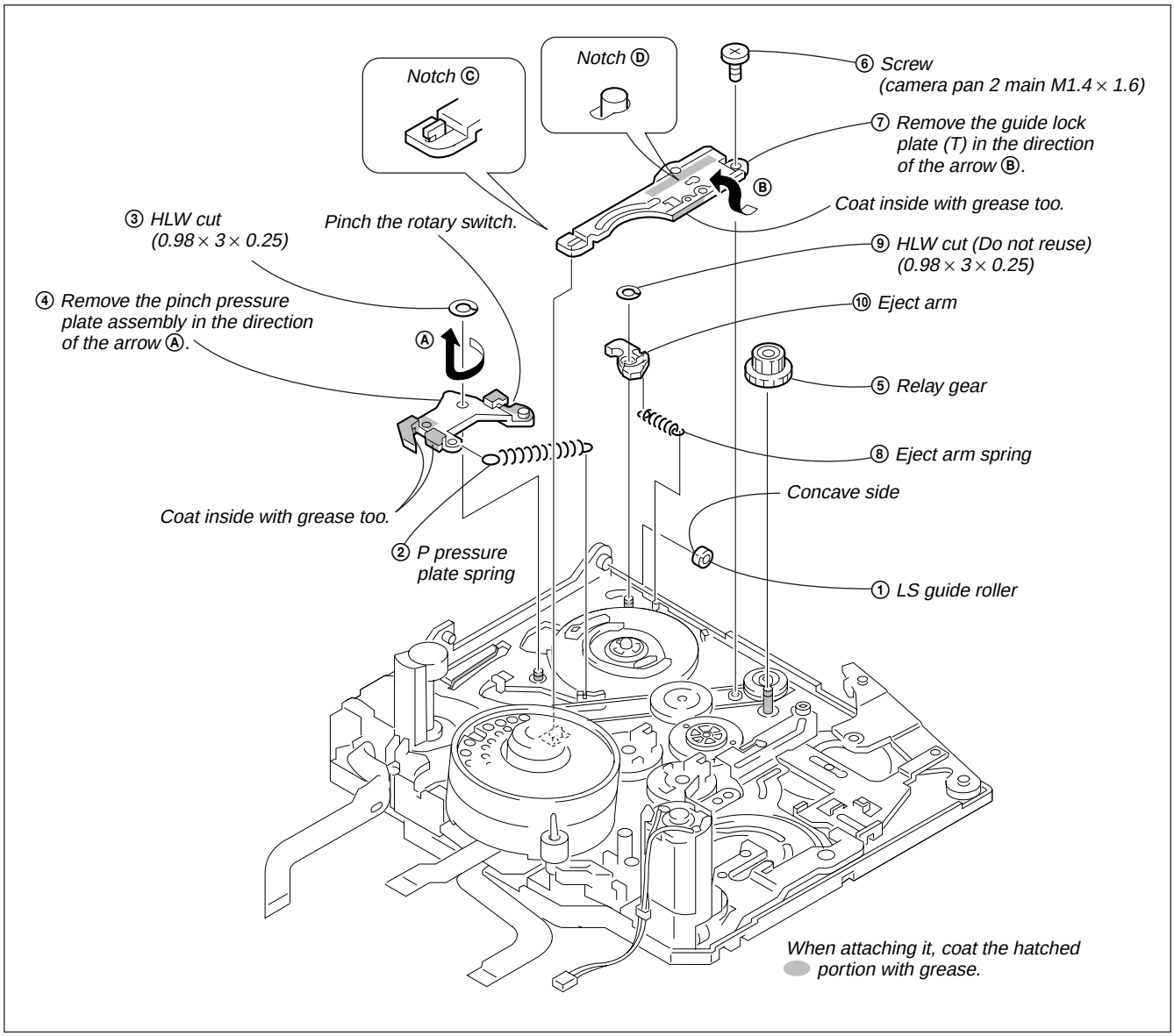

Notch Ⓒ
Notch Ⓓ
⑥ Screw (camera pan 2 main M1.4 × 1.6)
⑦ Remove the guide lock plate (T) in the direction of the arrow Ⓑ.
Ⓑ
Coat inside with grease too.
③ HLW cut (0.98 × 3 × 0.25)
Pinch the rotary switch.
⑨ HLW cut (Do not reuse) (0.98 × 3 × 0.25)
④ Remove the pinch pressure plate assembly in the direction of the arrow Ⓐ.
Ⓐ
⑩ Eject arm
⑤ Relay gear
⑧ Eject arm spring
Concave side
Coat inside with grease too.
② P pressure plate spring
① LS guide roller
When attaching it, coat the hatched portion with grease.

Fig. 4-15.

4-16. Rotary Switch, Cam Relay Gear, Change Gear Assembly, Timing Belt

Before replacing the timing belt, remove the guide rail T2 and capstan motor. (Refer to 4-4.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
3) Remove the cam relay gear ①.
4) Remove the timing belt ②.
5) Remove the HLW cut (0.98 × 3 × 0.25) ③ and change gear assembly ④.
6) Remove the four solderings ⑤ and remove the FP-299 flexible wiring board ⑥.
7) Push up the dowel of the rotary switch ⑦ from the bottom of the mechanism chassis assembly and remove the rotary switch in the direction of the arrow.

2. Attachment procedure

1) Insert the dowel of the rotary switch ⑦ into the hole on the mechanism chassis assembly and attach the rotary switch clockwise.
2) Align the FP-299 flexible wiring board ⑥ with the reference hole on the mechanism chassis and solder the flexible wiring board to the rotary switch ⑦ (at four locations).
3) Attach the change gear assembly ④ with the HLC cut (0.98 × 3 × 0.25)③.
4) Attach the timing belt ②.
   Note: There must be a clearance between the rotary switch ⑦ and timing belt ②.
5) Attach the cam relay gear ①.
   The in-phase markings of the rotary switch ⑦, cam relay gear (2) and cam relay gear (1) must be aligned.
6) Attach the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
7) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
8) Clean the shaft of the capstan motor. (Refer to 2-2.)

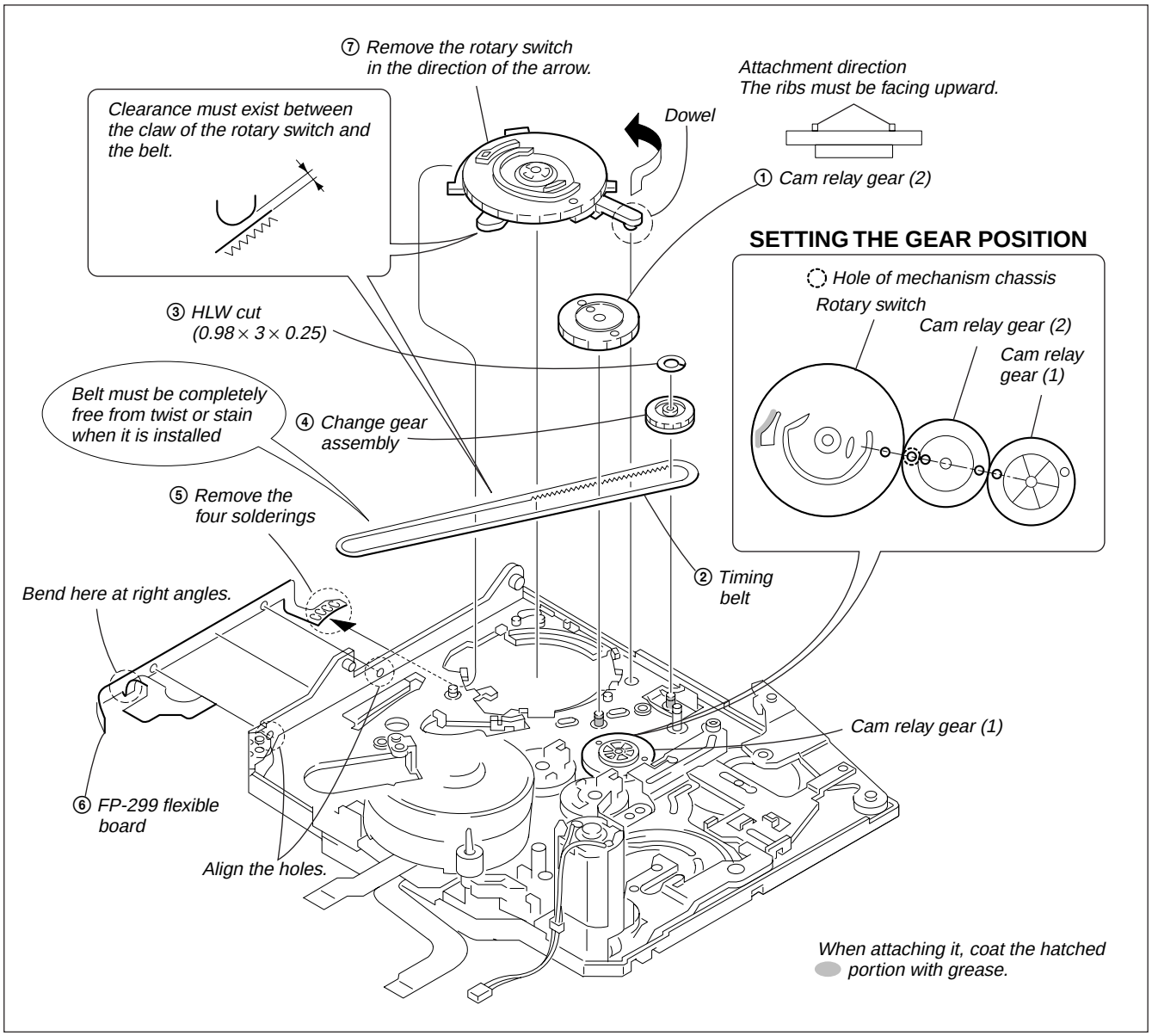

⑦ Remove the rotary switch in the direction of the arrow.
Attachment direction
The ribs must be facing upward.
Clearance must exist between the claw of the rotary switch and the belt.
Dowel
① Cam relay gear (2)
SETTING THE GEAR POSITION
Hole of mechanism chassis
Rotary switch
Cam relay gear (2)
Cam relay gear (1)
③ HLW cut (0.98× 3× 0.25)
Belt must be completely free from twist or stain when it is installed
④ Change gear assembly
⑤ Remove the four solderings
② Timing belt
Bend here at right angles.
Cam relay gear (1)
⑥ FP-299 flexible board
Align the holes.
When attaching it, coat the hatched portion with grease.

Fig. 4-16.

4-17. Guide Gear Assembly, Guide Gear T Assembly, Cam Relay Gear 1, Guide Lock Plate (S)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 main M1.4 × 1.6) ①.
3) Remove the guide lock plate (S) ② in the direction of the arrow Ⓐ.
4) Remove the two stop rings (E type 1.2) ③.
5) Remove the guide gear (S) assembly ④ and guide gear (T) assembly ⑤.
6) Remove the HLW cut (0.98 × 3 × 0.25) ⑥.
7) Remove the cam relay gear (1) ⑦.

2. Attachment procedure

1) Attach the cam relay gear (1) ⑦ with the HLW cut (0.98 × 3 × 0.25) ⑥.
   Note: The in-phase markings of the cam relay gear (1) ⑦, cam gear (2) and cam relay gear must be aligned.
2) Attach the guide gear (T) assembly ⑤ and guide gear (S) assembly ④ to the shaft in this order and adjust the positions. Then, attach them with the two stop rings (E type 1.2) ③.
   Note1: The in-phase markings of the GL arm assembly, guide gear (S) ④ and guide gear (T) ⑤ must be aligned.
   Note2: The guide gear assembly (S/T) has a different shape respectively. Pay attention to the shapes.
3) Fit the guide lock plate (S) ② in the groove on the shaft and insert the portion Ⓑ into the notch. Then, attach the plate with the screw (camera pan2 main M1.4 × 1.6) ①.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

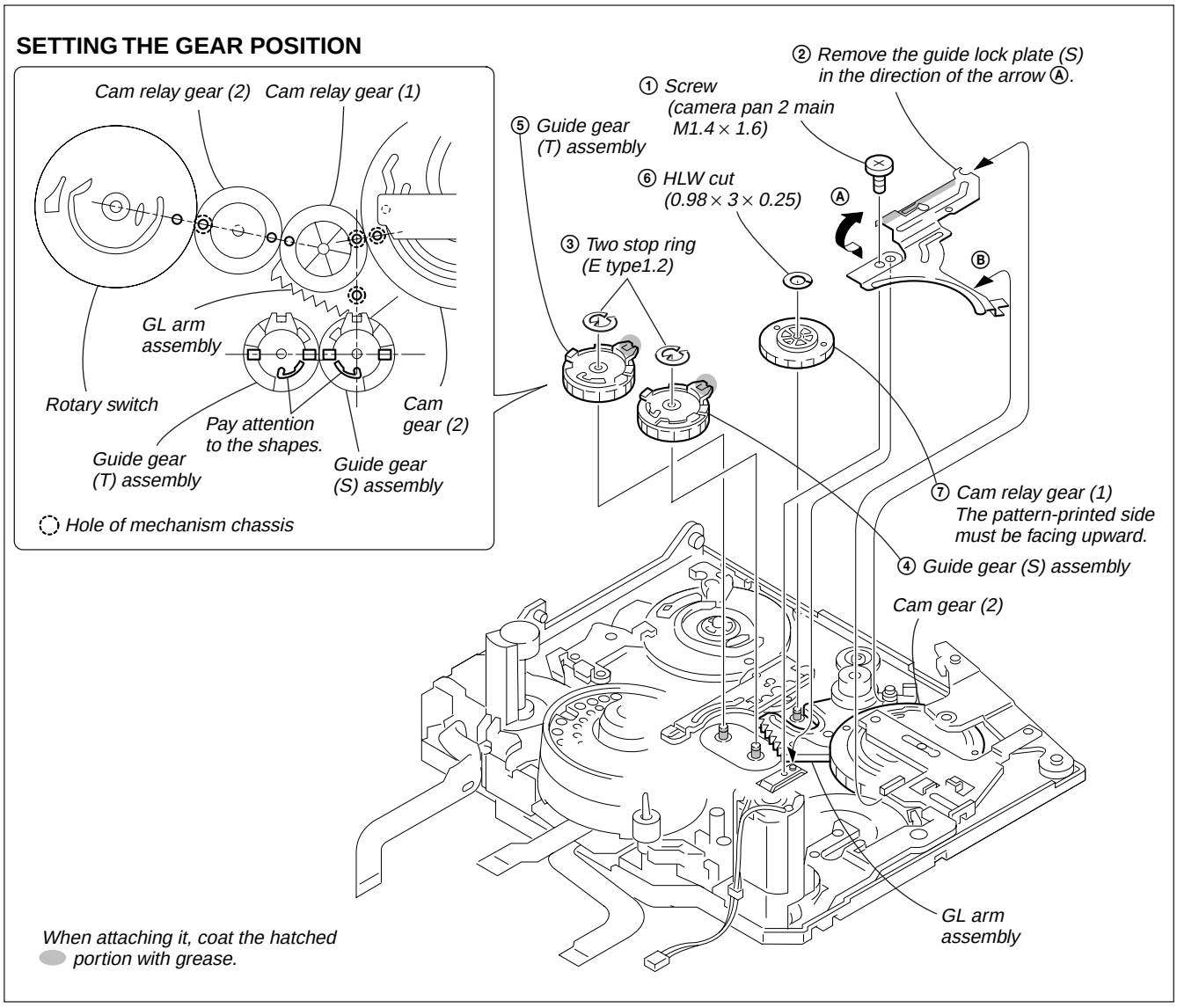

SETTING THE GEAR POSITION
Cam relay gear (2)
Cam relay gear (1)
GL arm assembly
Rotary switch
Pay attention to the shapes.
Cam gear (2)
Guide gear (T) assembly
Guide gear (S) assembly
Hole of mechanism chassis
② Remove the guide lock plate (S) in the direction of the arrow Ⓐ.
① Screw (camera pan 2 main M1.4 × 1.6)
⑤ Guide gear (T) assembly
⑥ HLW cut (0.98 × 3 × 0.25)
③ Two stop ring (E type1.2)
Ⓐ
Ⓑ
⑦ Cam relay gear (1) The pattern-printed side must be facing upward.
④ Guide gear (S) assembly
Cam gear (2)
GL arm assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-17.

4-18. LD Gear 4, Cam Gear 1, HC Drive Arm

Remove in advance the HCL arm assembly and loading motor assembly beforehand. (Refer to 4-2.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S). (Refer to 4-17.)
3) Remove the cover sheet ① and LD gear (4) ②.
4) Remove the T1 limiter arm ③ and cam gear (1) ④.
5) Remove the HC drive arm ⑤ in the direction of the arrow.

2. Attachment procedure

1) Attach the HC drive arm ⑤ under the drive base assembly.
2) Attach the cam gear (1) ④.
   The dowel of the HC drive arm ⑤ must be inserted into the groove on the lower side of the cam gear (1) ④.
   The in-phase markings of the cam gear (1) ④, cam gear (2) and cam relay gear (1) must be aligned.
3) Attach the LD gear (4) ② with the cover sheet ①.
4) Attach the guide plate (S).
5) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
6) Clean the tape running path. (Refer to 2-2.)

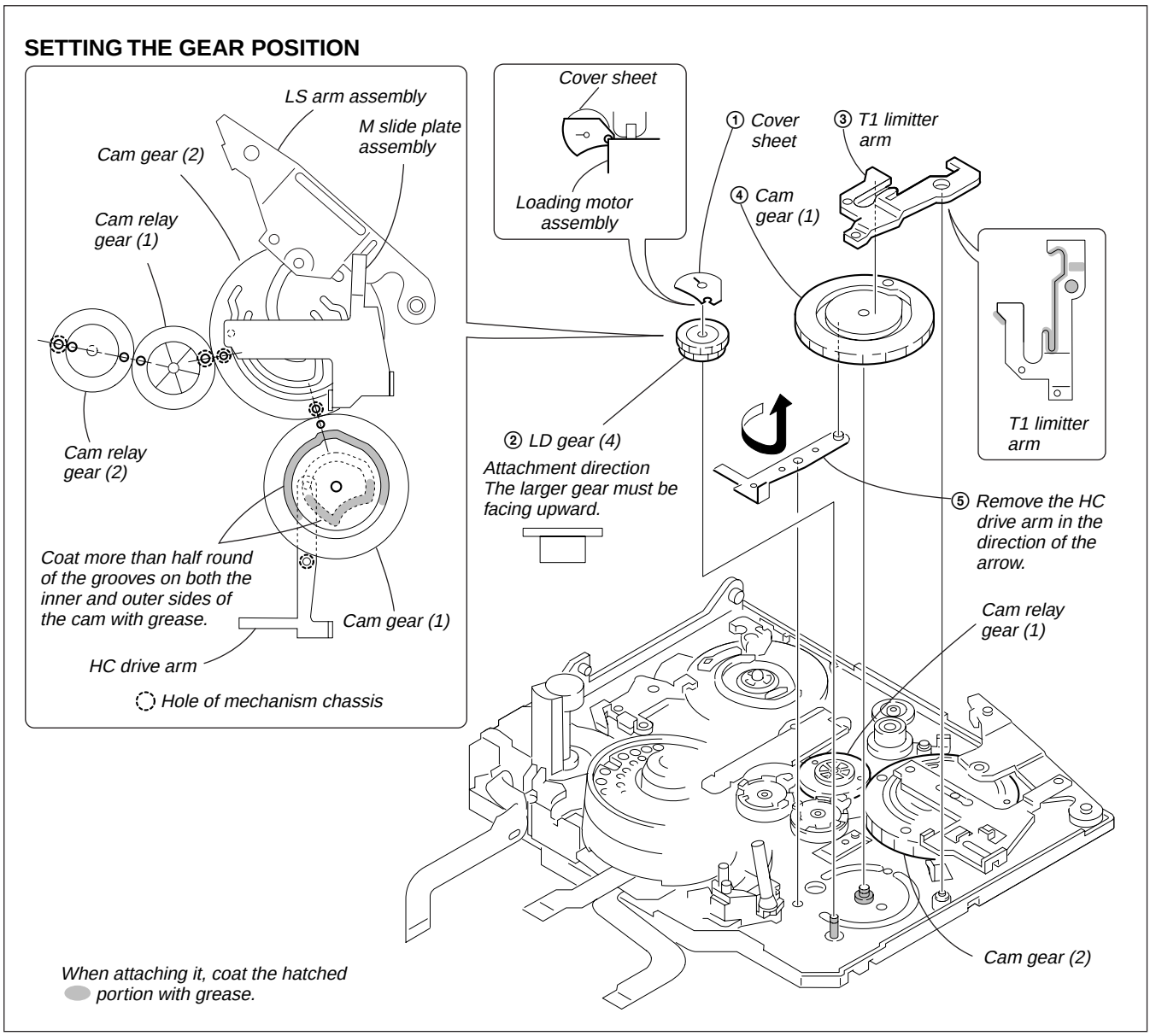

SETTING THE GEAR POSITION
LS arm assembly
M slide plate assembly
Cam gear (2)
Cam relay gear (1)
Cam relay gear (2)
Coat more than half round of the grooves on both the inner and outer sides of the cam with grease.
Cam gear (1)
HC drive arm
Hole of mechanism chassis
Cover sheet
Loading motor assembly
① Cover sheet
③ T1 limitter arm
④ Cam gear (1)
T1 limitter arm
② LD gear (4)
Attachment direction
The larger gear must be facing upward.
⑤ Remove the HC drive arm in the direction of the arrow.
Cam relay gear (1)
Cam gear (2)
When attaching it, coat the hatched portion with grease.

Fig. 4-18.

4-19. M Slide Plate Assembly, LS Arm Assembly, Cam Gear 2, GL Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S) (Refer to 4-17.)
3) Remove the relay gear ①.
4) Remove the M slide plate assembly ② in the direction of the arrow Ⓐ.
5) Remove the LS arm assembly ③ and LS arm roller ④.
6) Remove the cam gear (2) ⑤.
7) Remove the GL arm assembly ⑥ from the lower side of the cam relay gear (1) in the direction of the arrow Ⓑ.

Note: After removing the GL arm assembly, fix the guide gear (S/T) assembly.

2. Attachment procedure

1) Attach the GL arm assembly ⑥ to the shaft so that the GL arm assembly ⑥ is positioned under the cam relay gear (1) .

Note: The in-phase markings of the guide gear (S/T) assembly and GL arm assembly ⑥ must be aligned.

2) While aligning the cam gear (2) ⑤ with the dowel of the GL arm assembly, attach the cam gear (2) ⑤.

Note: The in-phase markings of the cam relay gear (1), cam gear (1) and cam gear (2) ⑤ must be aligned.

3) Attach the LS arm roller ④ to the LS arm assembly ③. While aligning them with the cam groove on the cam gear (2) ⑤, attach them.
4) Attach the M slide plate assembly ②.
5) Attach the relay gear ①.
6) Attach the guide lock plate (S). (Refer to 4-17.)
7) Attach the LS chassis block assembly to the mechaical chassis. (Refer to 4-10.)

Note: Check that the in-phase marking of each gear is aligned.

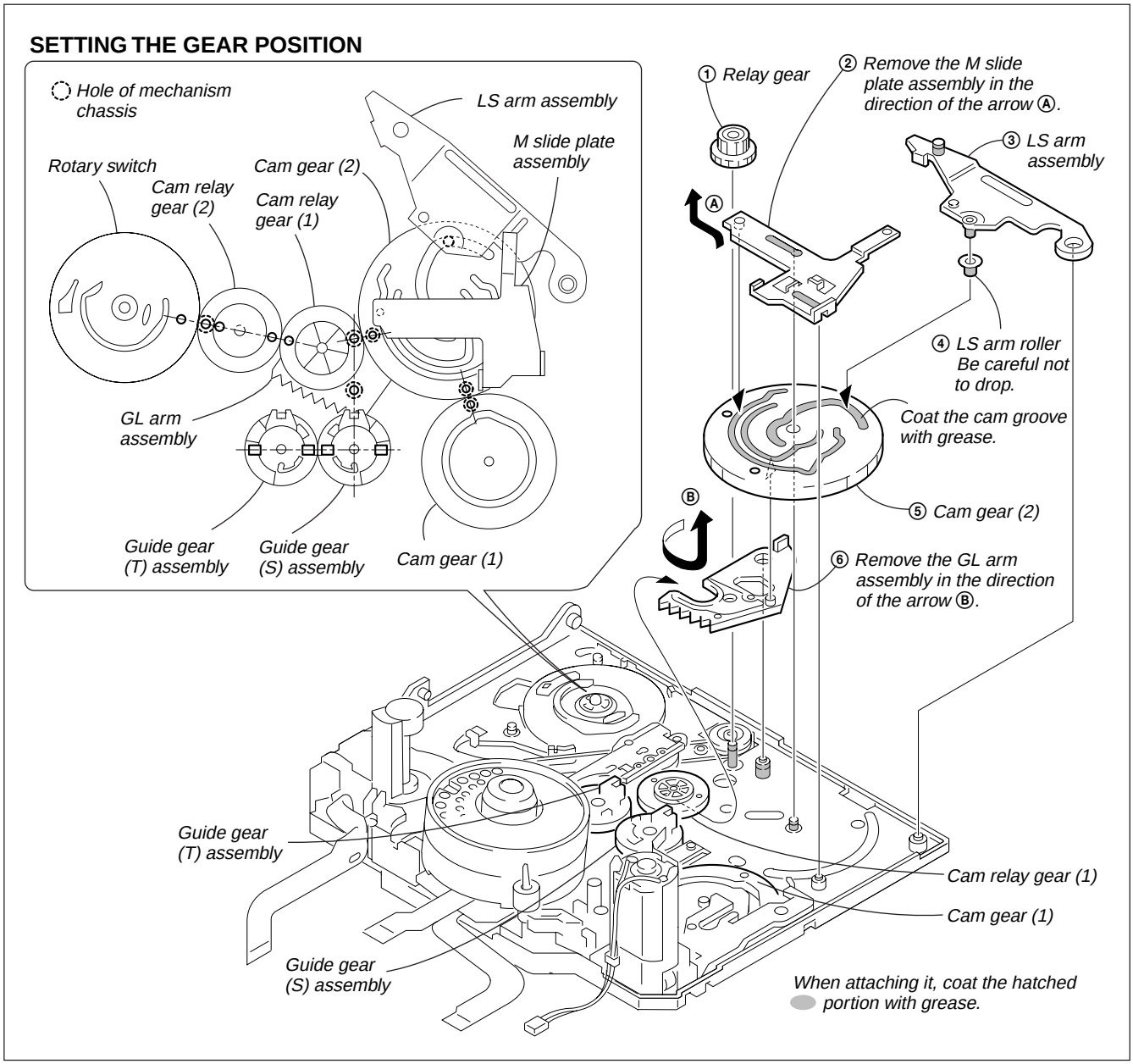

SETTING THE GEAR POSITION
Hole of mechanism chassis
LS arm assembly
M slide plate assembly
Rotary switch
Cam relay gear (2)
Cam gear (2)
Cam relay gear (1)
GL arm assembly
Guide gear (T) assembly
Guide gear (S) assembly
Cam gear (1)
① Relay gear
② Remove the M slide plate assembly in the direction of the arrow Ⓐ.
③ LS arm assembly
Ⓐ
④ LS arm roller Be careful not to drop.
Coat the cam groove with grease.
⑤ Cam gear (2)
Ⓑ
⑥ Remove the GL arm assembly in the direction of the arrow Ⓑ.
Guide gear (T) assembly
Cam relay gear (1)
Cam gear (1)
Guide gear (S) assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-19.

5. Adjustment

5-1. Check and Adjustment of TG1 Back-tension Position

1. Check Procedure

1) Assemble the mechanism deck into the main unit.
2) Thread a normal tape and let the machine enter the PB (or REC) mode.
3) Check that the distance between the upper flange of the TG1 guide and the side surface of the LS chassis block is 12.0 ± 0.4 mm (range of fluctuation: 0.5 mm or less).

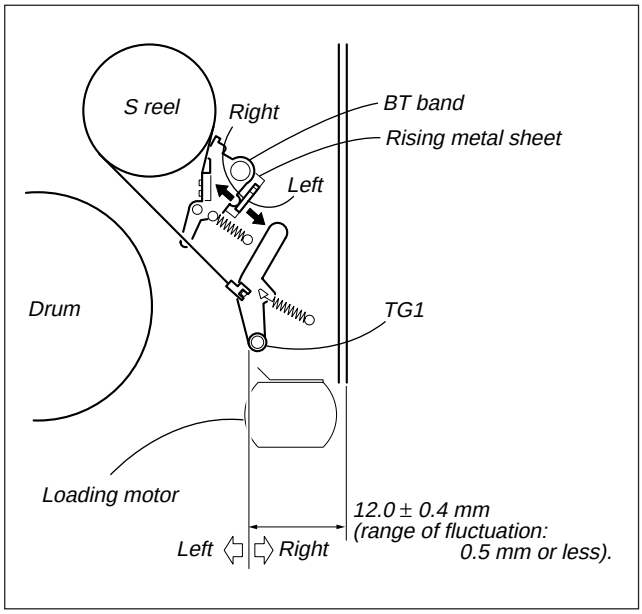


Fig. 5-1.

2. Adjustment Procedure

1) Remove the cassette compartment and the blind plate.
2) Adjust the position of the TG1 guide by changing the tilt of the rising metal sheet of the LS chassis block assembly.

5-2. Check and Adjustment of FWD/RVS Back-tension

1. Check Procedure

1) Install the mechanism deck in the main unit and set the take-up torque cassette (Ref. No. J-7).
2) Check the FWD/RVS take-up torque.
   Check the FWD torque in the PLAY state.
   Specified value: 7 to 12 gf•cm
   Check the RVS torque in the RVS state.
   Specified value: 19.5 to 29.5 gf•cm

2. Adjustment Procedure

1) If the value of the FWD torque is larger than the specifications, change the position where the TG1 arm spring is hooked in the direction of the arrow Ⓐ. If the value of the FWD torque is smaller than the specifications, change the position in the direction of the arrow Ⓑ.

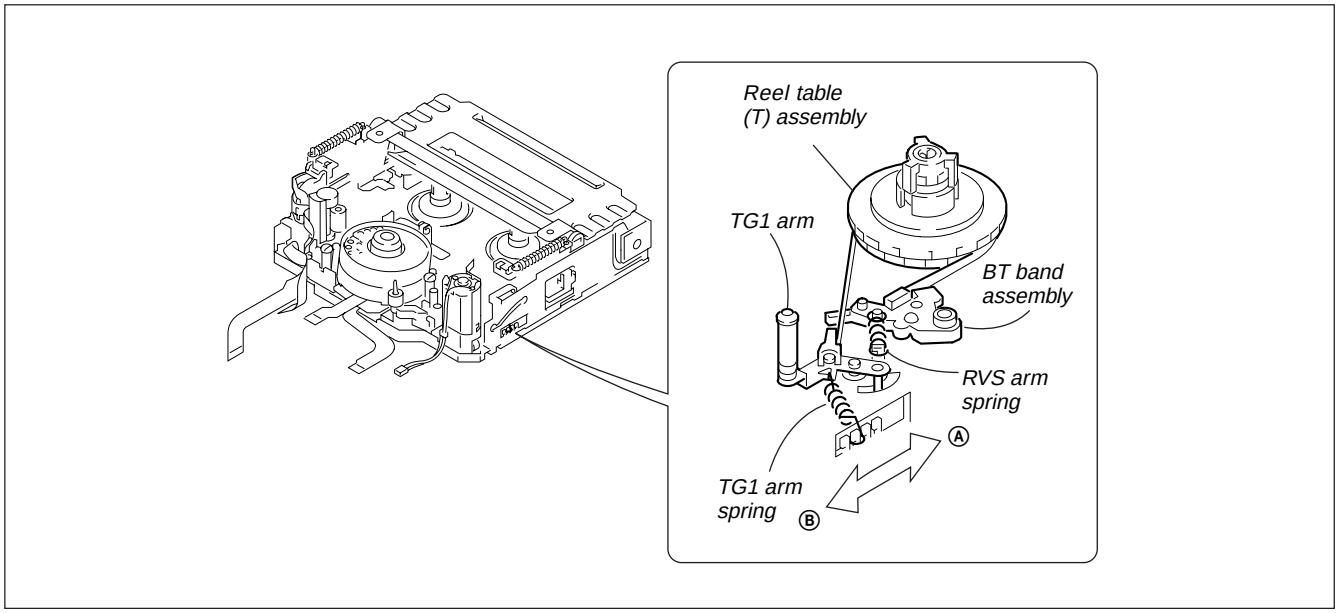


Fig. 5-2.

5-3. Capstan Motor Azimuth Position Adjustment

1. Check Procedure

1) Insert the thickness gauge (Ref. No. J-16) of 0.75 mm between the protrusion of the mechanism chassis and the capstan motor, and check the azimuth position.

2. Adjustment Procedure

1) Loosen the capstan azimuth adjustment screw (SANG camera pan 2 M1.4 × 4.5), and insert the thickness gauge (0.75 mm)(Ref. No. J-16) between the protrusion of the mechanism chassis and the capstan motor.
2) Slowly tighten the capstan azimuth adjustment screw until it slightly contacts the thickness gauge, and remove the thickness gauge.

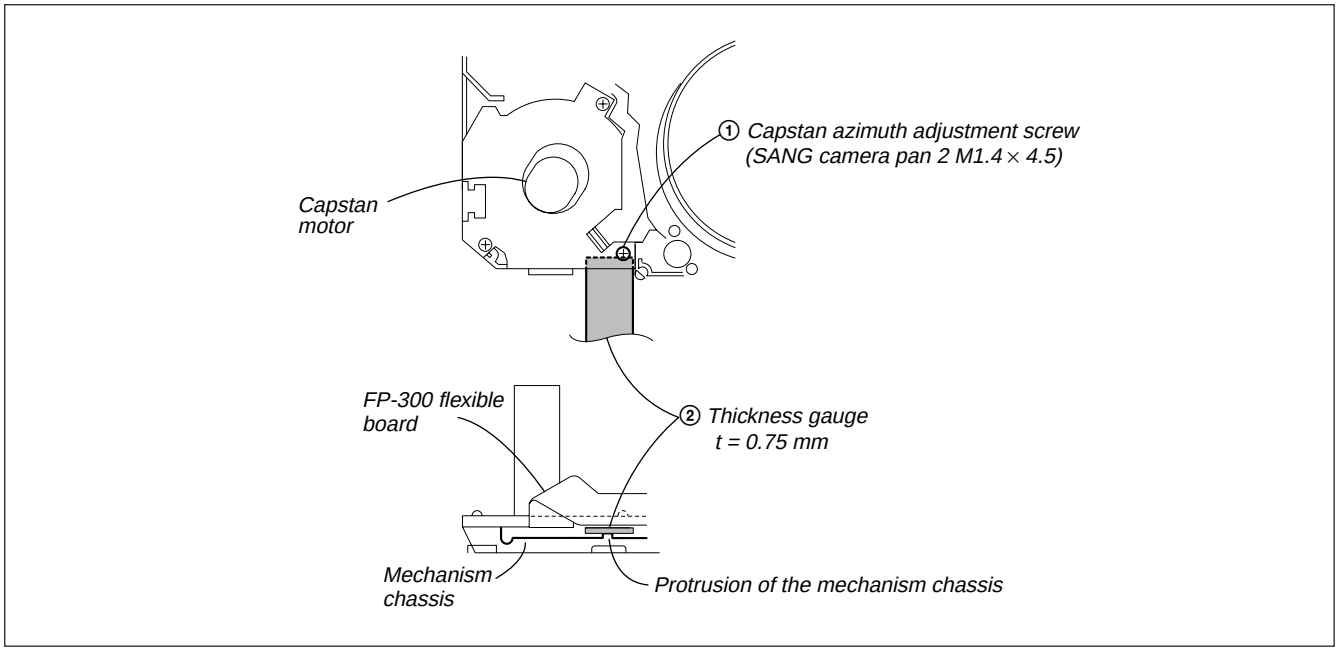


Fig. 5-3.

5-4. Tape Path Adjustment

Purpose: Adjust the linearity of the head.
If the adjustment is not correct:
Noise appears on the top and bottom of the screen when playing back the tape that is recorded by other recorders.

5-4-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the remote terminal.
3) Set the adjustment remote commander to the PATH mode (track shift mode)* and release the auto tracking.
4) Connect an oscilloscope as follows:
   CH1: Test connector' PB RF terminal
   External trigger: Test connector' RF SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
6) Confirm that the RF waveform on scope is flat both at entrance side and exit side.
   If the RF waveform is not flat, perform the adjustment by referring to section 4-2.)
7) After the adjustment is completed, release the PATH mode (track shift mode)*.

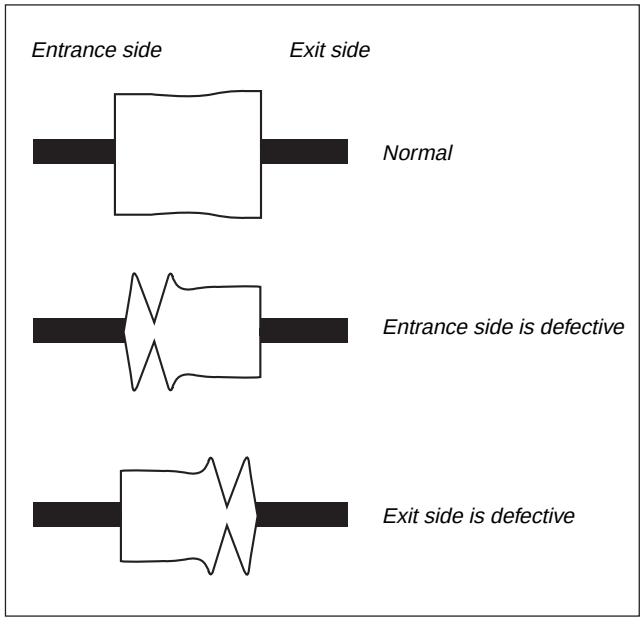


Fig. 5-4.

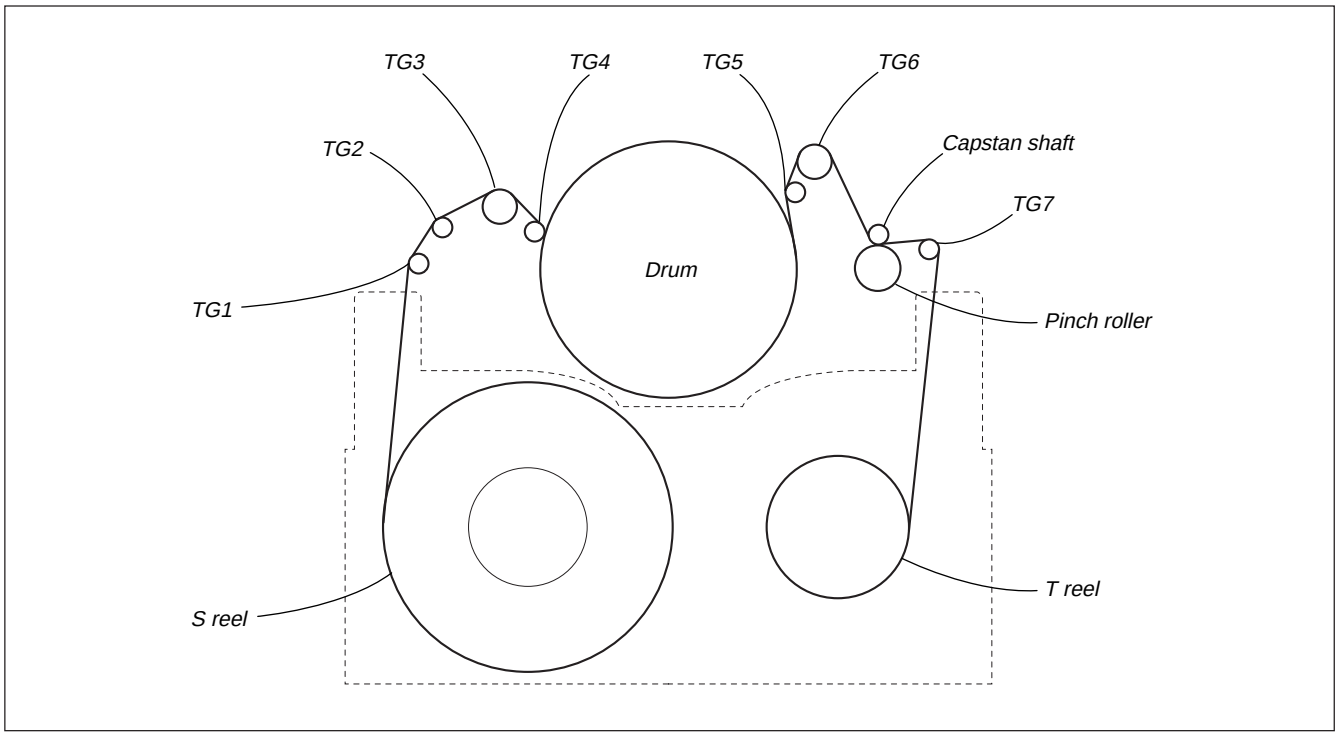


Fig. 5-5.

* **Setting and releasing the track shift mode**

In case of the DCR-TRV230

Setting
1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 88, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 02. (Note)

Releasing
1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 80, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 00.
4. Select page: 0, address: 01 and set data: 00. (Note)

Note: In case of the Digital8 only, set the data of page: 2, address: 2E.

5-4-2. Tracking Adjustment (Refer to Fig. 5-6.)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the No.3 guide until the envelope at the entrance side waveform becomes flat.
3) Adjust the No.6 guide until the envelope at the exit side waveform becomes flat.

☆ The TG-3/6 zenith adjustment screws do not need to be adjusted.

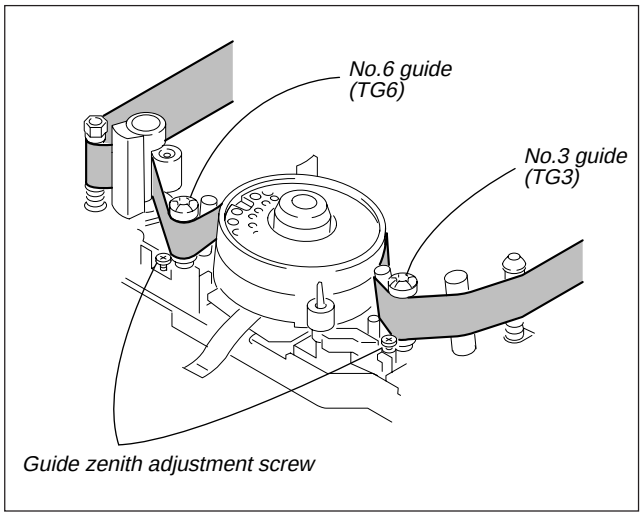


Fig. 5-6.

5-4-3. No.7 Guide (TG7) Adjustment (Refer to Fig. 5-7.)

1) Playback the tape and set the REV mode.
2) Confirm that tape slack does not occur in between the No.6 guide (TG6) ① and capstan ②. If any tape slack occurs, rotate the TG7 nut ④ of the No.7 guide (TG7) ③ to remove the tape slack.
3) Playback the tape again and confirm that tape slack does not occur between the capstan ② and No.7 guide (TG7) ③. If the tape slack occurs exceeding the specifications (specifications: 0.5 mm or less), rotate the TG7 nut ④ to make the tape slack below the specifications (0.5 mm). When the tape slack between the No.6 guide (TG6) ① and capstan ② is 0.3 mm or less in the REV mode, it means that the adjustment is completed.

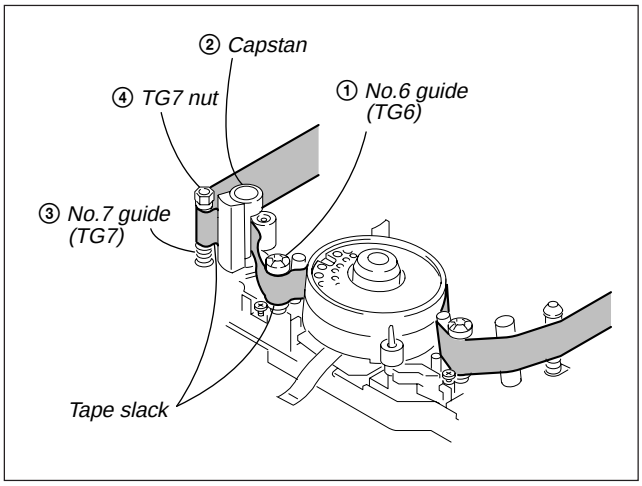


Fig. 5-7.

5-4-4. CUE and REV Waveform Check (Refer to Fig. 5-8)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6) and enter the REV mode.
   Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform sections "5-4-2 Tracking Adjustment" and "5-4-3 No. 7 Guide (TG7) Adjustment".
2) Enter the UCE mode. Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform section "5-4-2 Tracking Adjustment".

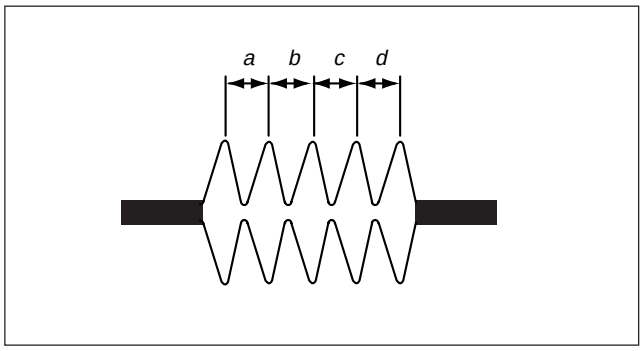


Fig. 5-8.

5-4-5. Check upon Completion of Adjustment

5-4-5-1. Tracking Check

1) Playback the tracking alignment tape in the PATH mode. Compare the amplitude of the RF waveform in the AUTO tracking mode and with that in the PATH mode. Confirm that the amplitude of the RF waveform decreases to about 3/4 when the tracking alignment tape is switched from the AUTO tracking mode to the PATH mode. (Refer to Fig. 5-9)
2) During step 1, confirm that the minimum amplitude (E MIN) is 65% or more of the maximum amplitude (E MAX) of the RF waveform. (Refer to Fig. 5-10)
3) Confirm that the RF waveform does not fluctuate too excessively.(Refer to Fig. 5-11)

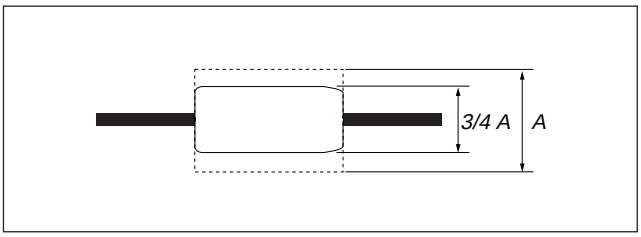


Fig. 5-9.

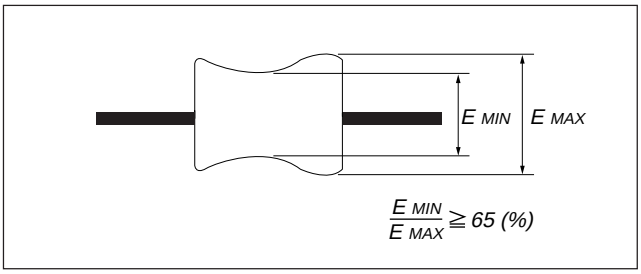


Fig. 5-10.

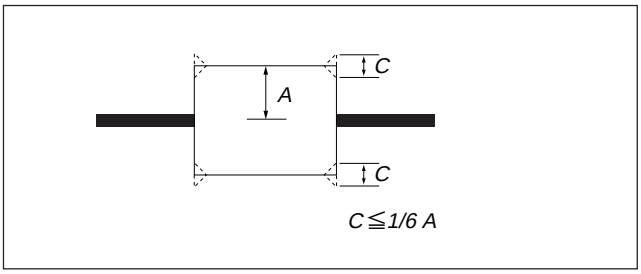


Fig. 5-11.

5-4-5-2. Rise-up Check (Refer to Fig. 5-12)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6).
2) Turn OFF the Track Shift mode.
3) Eject the cassette tape once. Then insert the cassette tape for loading again.
4) Confirm that the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
5) Run the tape in the CUE/REV and the FF/REW mode. Then playback the tracking alignment tape and confirm the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
6) Repeat the above steps 3) to 5) once again for re-check.

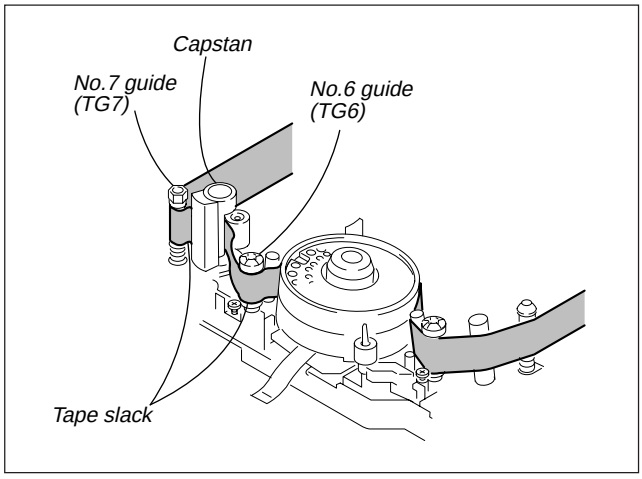


Fig. 5-12.

5-4-5-3. Tape Run Check (Refer to Fig. 5-13)

1) Playback the thin video tape such as P6-120MP (NTSC), P6-90MP (PAL). Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the top flange of the No. 3 guide (TG3), at the top flange of the No. 6 guide (TG6) and at both the top and bottom flanges of the No. 7 guide (TG7).
2) Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the flanges of the respective guide when the FF button is pressed during PLAY mode to enter the CUE mode and when the REW button is pressed during PLAY mode to enter the REV mode.

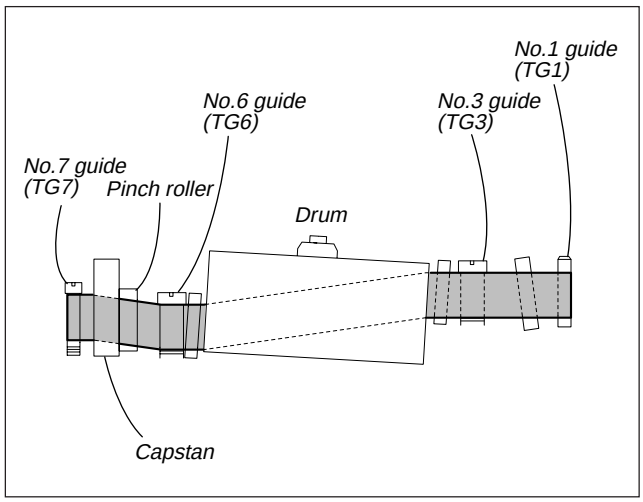
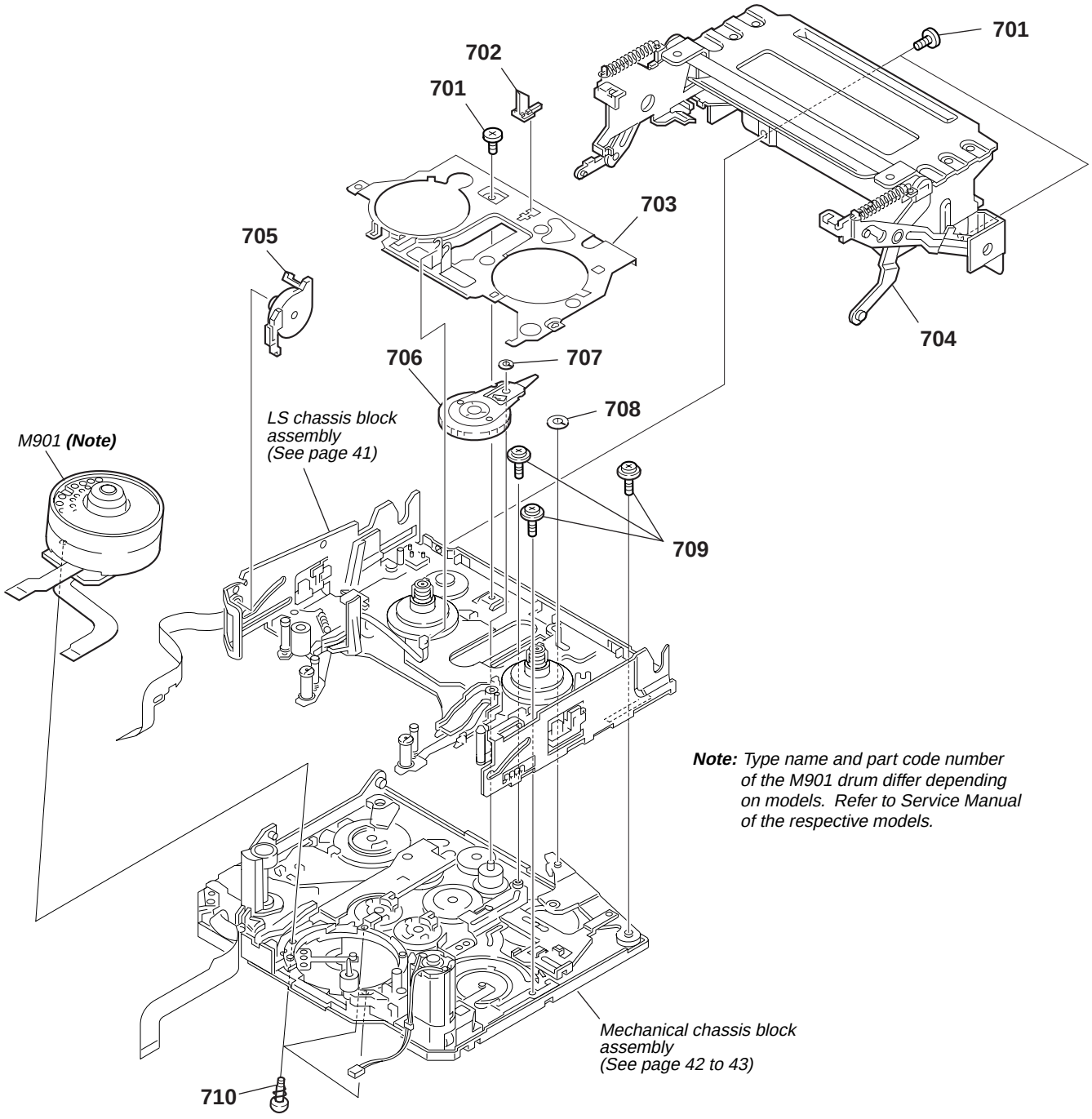


Fig. 5-13.

6. Exploded Views

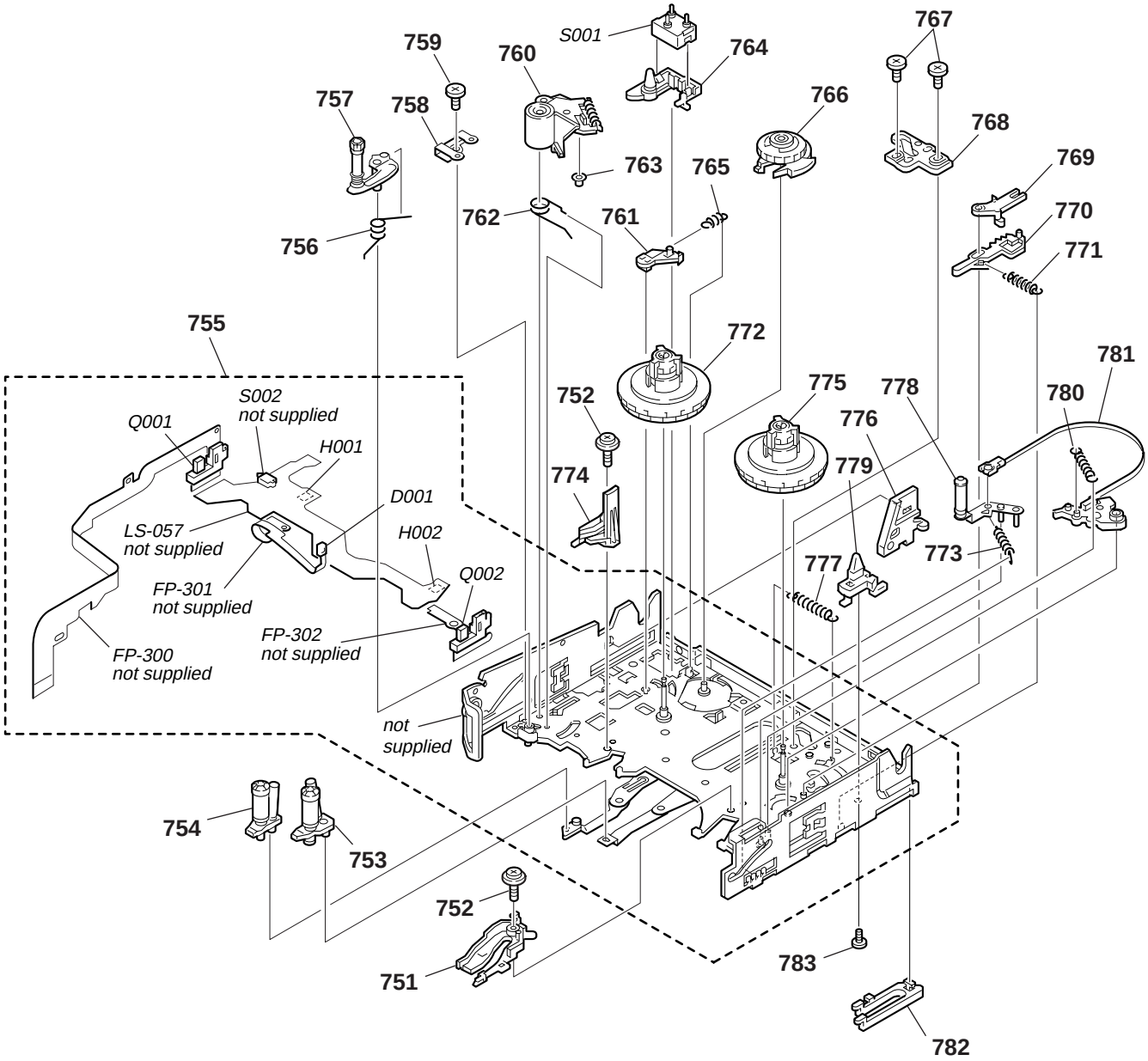
6-1. Cassette Compartment Assy, Drum Assy



Note: *Type name and part code number of the M901 drum differ depending on models. Refer to Service Manual of the respective models.*

Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
702	3-065-895-01	LEVER, REEL RELEASE	
703	3-065-896-01	PLATE, BLIND	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	
705	X-3951-302-1	DAMPER ASSY	
706	X-3951-297-1	GEAR ASSY, R DRIVE	
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	
708	3-065-935-01	HLC CUT (1.8X4X0.5)	
709	3-947-503-01	SCREW (M1.4)	
710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
M901	— Note —	DRUM	

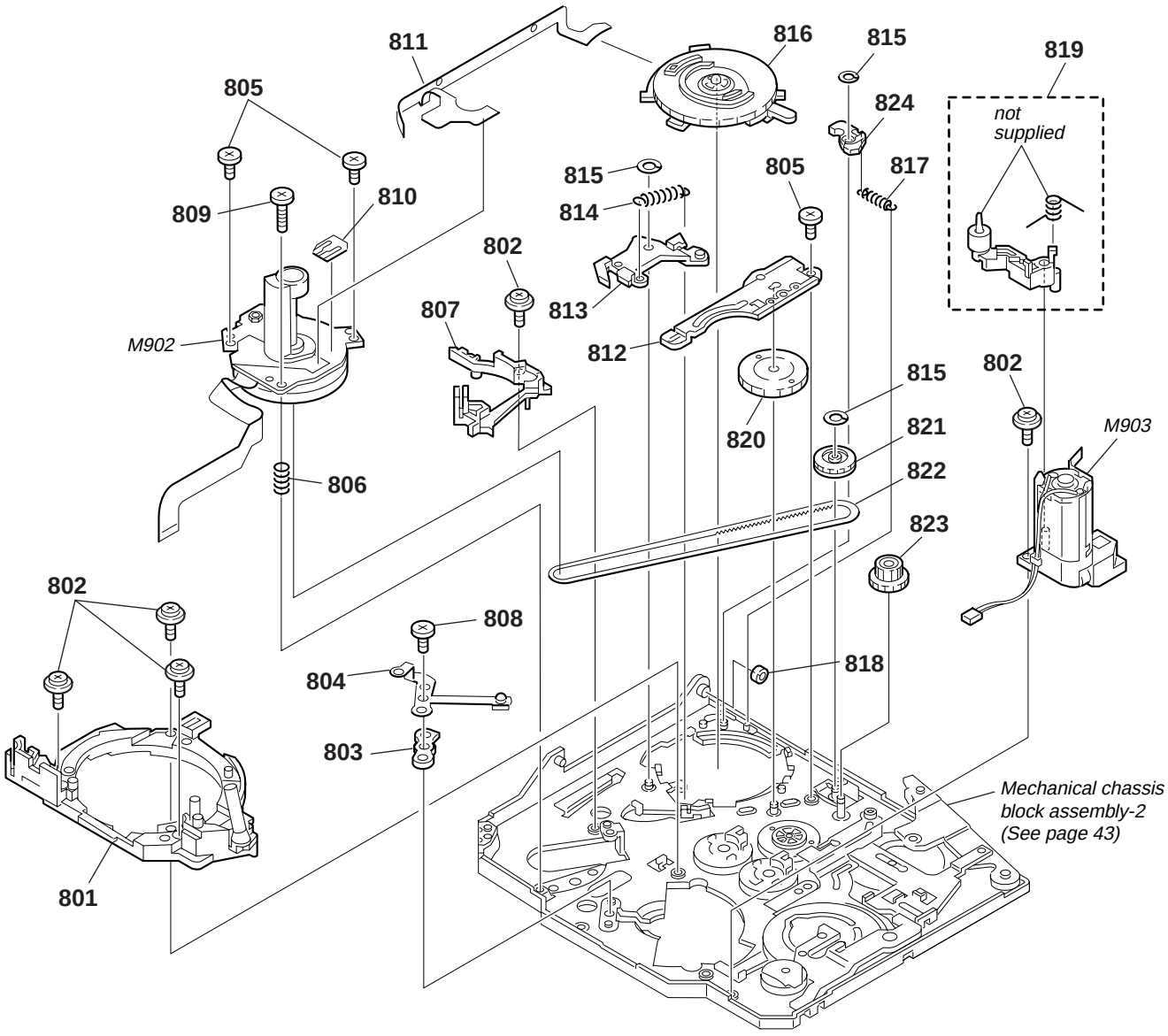
6-2. LS Chassis Block Assembly



Ref. No.	Part No.	Description	Remarks
751	3-065-822-01	RAIL (S), GUIDE	
752	3-947-503-01	SCREW (M1.4)	
753	A-7096-416-A	BASE (S) BLOCK ASSY, GUIDE	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS	
756	3-065-802-01	SPRING, TG7 ARM	
757	A-7096-414-A	ARM BLOCK ASSY, TG7	
758	3-065-801-01	RETAINER, TG7	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
760	X-3951-303-1	ARM ASSY, PINCH	
761	3-065-823-01	ARM, T RATCHET	
762	3-065-794-01	ROAD (SPR), PINCH ARM	
763	3-065-792-01	ROLLER, P LIM ARM	
764	3-065-834-01	GUIDE (T), CASSETTE	
765	3-065-824-01	SPRING, T RATCHET	
766	A-7096-417-A	SOFT ASSY, T	
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8 TYPE3	
768	3-065-832-01	PLATE, LS CAM	
769	3-065-828-01	ARM, S RATCHET	
770	3-065-829-01	PLATE, S RATCHET (RE)	

Ref. No.	Part No.	Description	Remarks
771	3-065-830-01	SPRING, S RATCHET	
772	X-3951-288-1	TABLE (T) ASSY, REEL	
773	3-065-819-01	SPRING, TG1 ARM	
774	3-065-821-01	RAIL (T), GUIDE	
775	X-3951-289-1	TABLE (S) ASSY, REEL	
776	3-065-833-01	GUIDE, LOCK	
777	3-065-831-01	PLATE (SPR), RE RETURN	
778	X-3951-304-1	ARM ASSY, TG1	
779	3-065-835-01	GUIDE (S), CASSETTE	
780	3-065-820-01	SPRING, RVS ARM	
781	X-3951-296-1	BAND (ASSY), BT	
782	3-065-836-01	COVER, LS GREASE	
783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)	

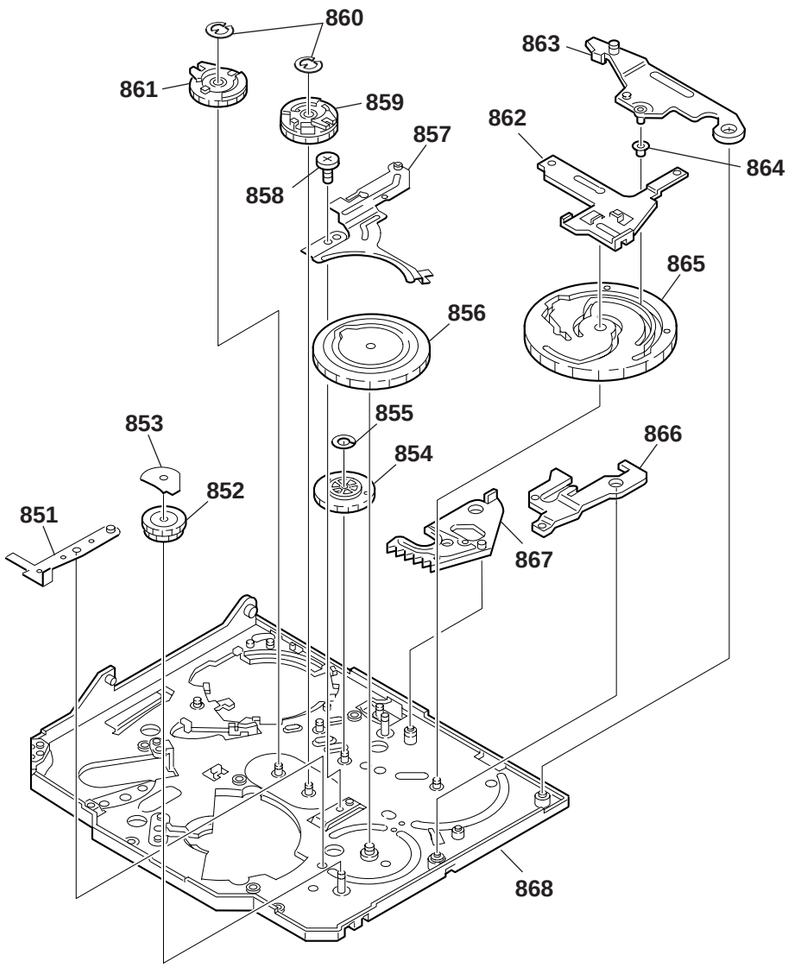
6-3. Mechanical Chassis Block Assembly-1



Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM	
802	3-947-503-01	SCREW (M1.4)	
803	3-065-928-01	SPACER, GROUND	
804	3-065-927-01	GROUND, DRUM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
806	3-067-154-01	SPRING, CAPSTAN	
807	3-065-931-01	RAIL (T2), GUIDE	
808	X-3947-398-1	SCREW ASSY, M1.7 PW	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)	
811	1-680-434-11	FP-299 FLEXIBLE BOARD	
812	3-065-877-01	PLATE (T), GUIDE LOCK	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	

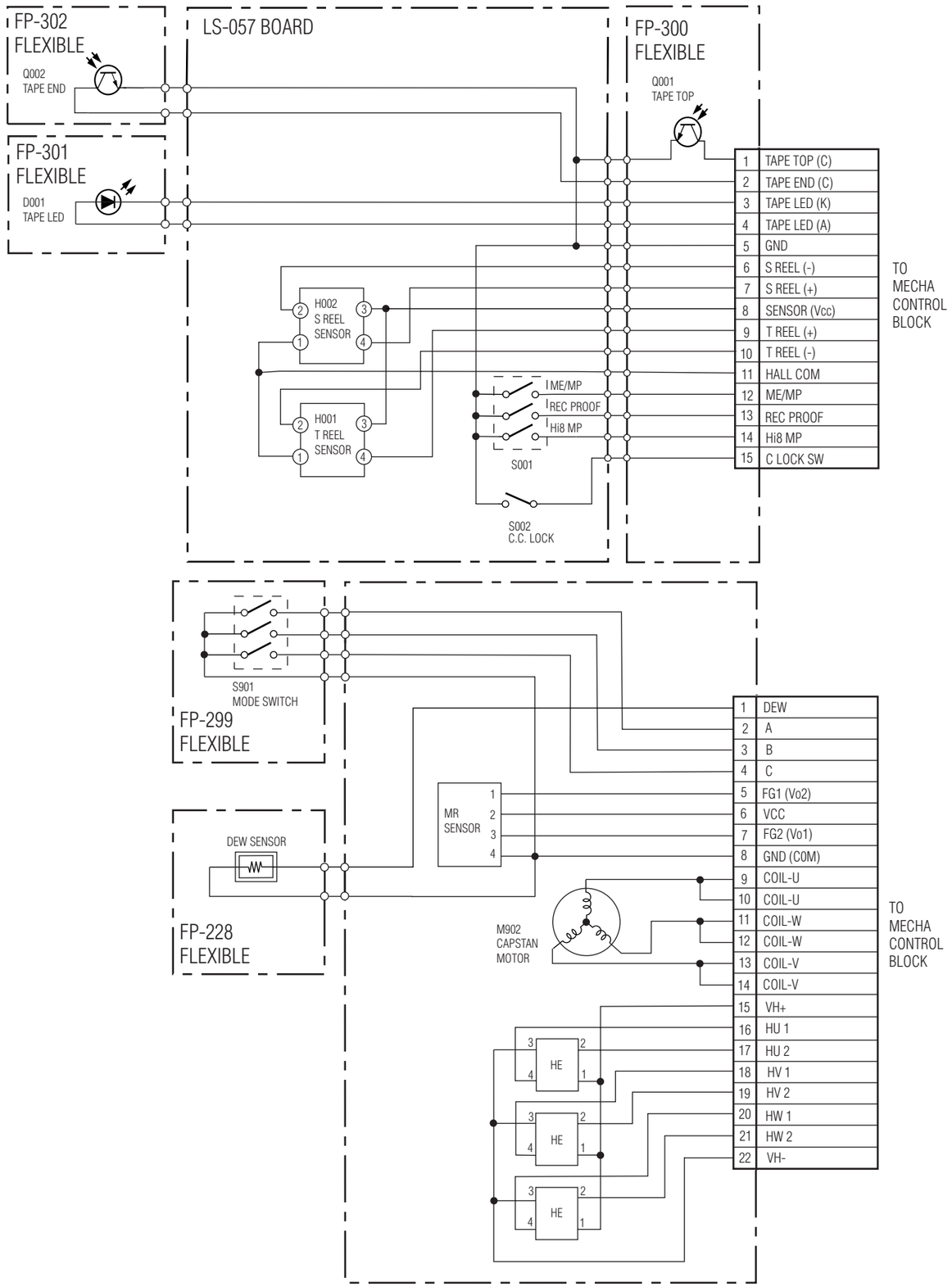
Ref. No.	Part No.	Description	Remarks
814	3-065-881-01	SPRING, P PRESSURE PLATE	
815	3-065-934-01	HLW CUT 0.98X3X0.25	
816	1-786-096-11	SWITCH, ROTARY	
817	3-065-898-01	SPRING, EJECT ARM	
818	3-065-870-01	ROLLER, LS GUIDE	
819	A-7096-421-A	ARM ASSY, HCL	
820	3-065-918-01	GEAR (2), CAM RELAY	
821	A-7096-419-A	GEAR ASSY, CHANGE	
822	3-065-902-01	BELT, TIMING	
823	3-065-905-01	GEAR, RELAY	
824	3-065-882-01	ARM, EJECT	
M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-4. Mechanical Chassis Block Assembly-2

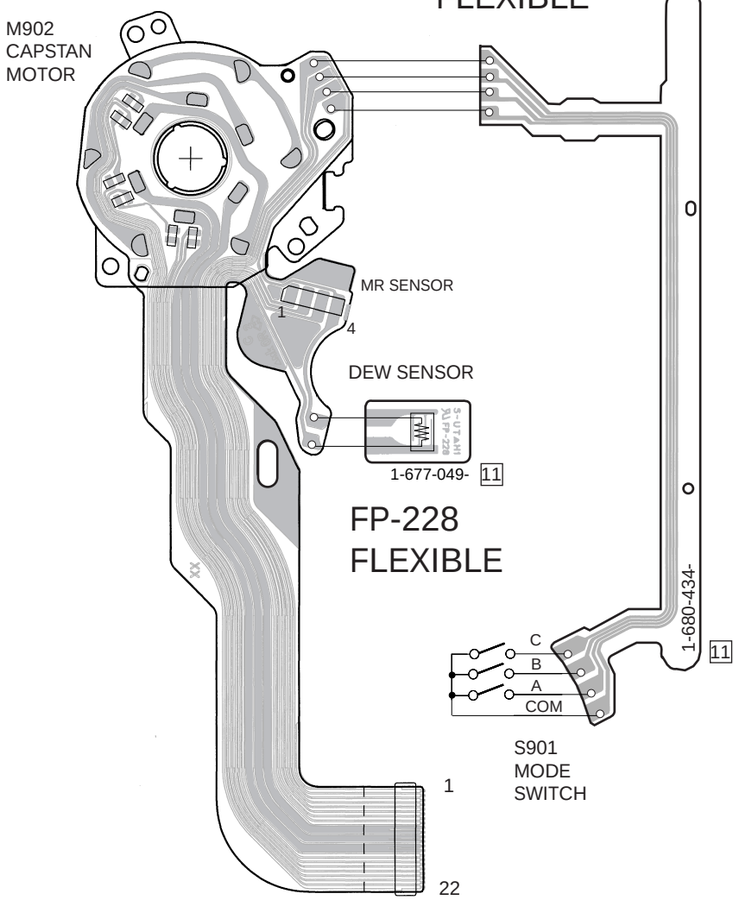


Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE	
852	3-065-913-01	GEAR (4), LD	
853	3-065-914-01	SHEET, COVER	
854	3-065-917-01	GEAR (1), CAM RELAY	
855	3-065-934-01	HLW CUT 0.98X3X0.25	
856	3-065-915-01	GEAR (1), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	
860	7-624-101-04	STOP RING 1.2 (E TYPE)	
861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
862	X-3951-307-1	PLATE ASSY, M SLIDE	
863	X-3951-305-1	ARM ASSY, LS	
864	3-065-901-01	ROLLER, LS ARM	
865	3-065-916-01	GEAR (2), CAM	
866	3-065-919-01	ARM, T1 LIMITTER	
867	X-3951-308-1	ARM ASSY, GL	
868	X-3951-300-1	CHASSIS ASSY, MECHANICAL	

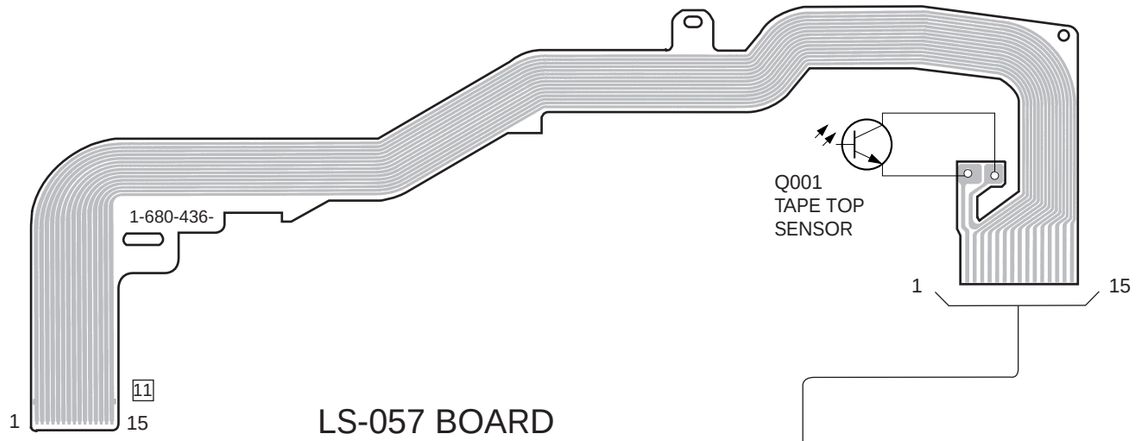
7. Printed Wiring Boards and Schematic Diagrams



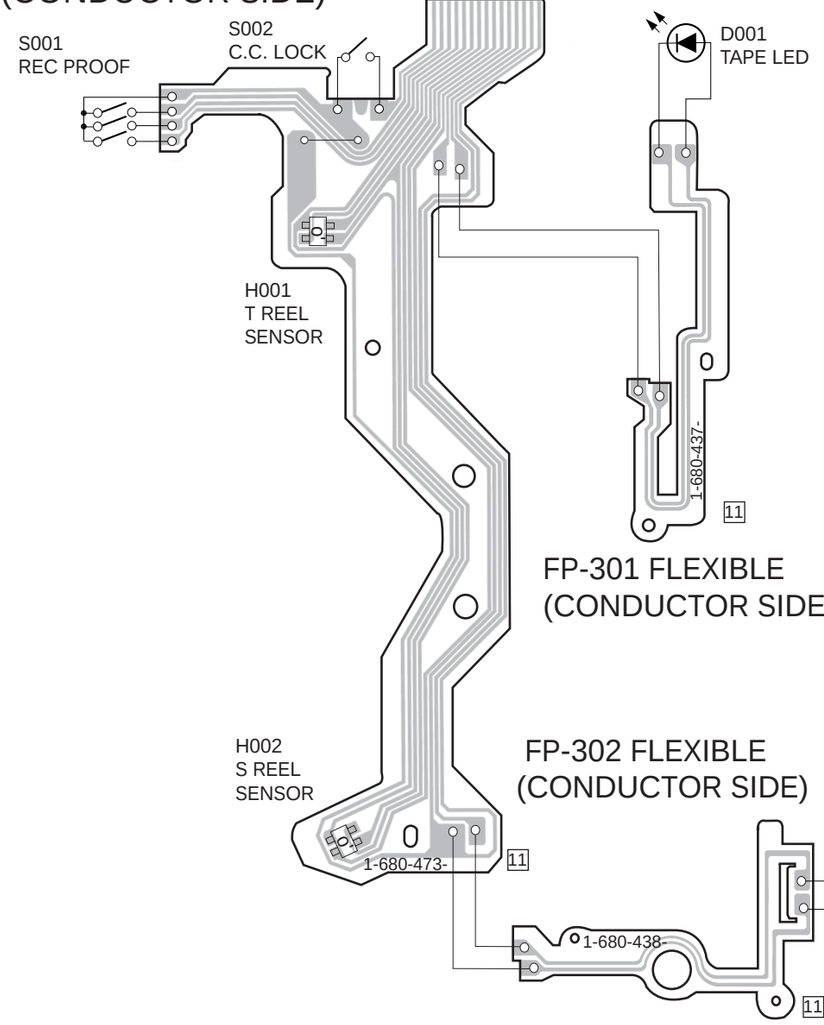
FP-299 FLEXIBLE



FP-300 FLEXIBLE (COMPONENT SIDE)



LS-057 BOARD (CONDUCTOR SIDE)



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